

Grade 3 Advanced Workbook

23 lessons · printable · answer key at the back

Name _____

Date _____

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Rounding to 10 and 100

WORKED EXAMPLE

$$439 \approx \underline{440}$$

1. Rounding numbers

Round each number to the nearest 10.

- | | | | |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 1 337 $\approx$ _____ | 2 749 $\approx$ _____ | 3 979 $\approx$ _____ | 4 67 $\approx$ _____ |
| 5 962 $\approx$ _____ | 6 694 $\approx$ _____ | 7 293 $\approx$ _____ | 8 585 $\approx$ _____ |
| 9 758 $\approx$ _____ | 10 169 $\approx$ _____ | 11 562 $\approx$ _____ | 12 888 $\approx$ _____ |
| 13 357 $\approx$ _____ | 14 447 $\approx$ _____ | 15 816 $\approx$ _____ | 16 857 $\approx$ _____ |
| 17 679 $\approx$ _____ | 18 441 $\approx$ _____ | 19 872 $\approx$ _____ | 20 593 $\approx$ _____ |
| 21 104 $\approx$ _____ | 22 771 $\approx$ _____ | 23 232 $\approx$ _____ | 24 716 $\approx$ _____ |

Equal Groups: the 2 Times Table

2. The 2 times table

Work out each product.

1 $5 \times 2 = \underline{\quad}$

2 $10 \times 2 = \underline{\quad}$

3 $7 \times 2 = \underline{\quad}$

4 $9 \times 2 = \underline{\quad}$

5 $6 \times 2 = \underline{\quad}$

6 $8 \times 2 = \underline{\quad}$

7 $1 \times 2 = \underline{\quad}$

8 $2 \times 2 = \underline{\quad}$

9 $3 \times 2 = \underline{\quad}$

10 $4 \times 2 = \underline{\quad}$

3. Missing factors: the 2 times table

Write the missing number in each one.

11 $\underline{\quad} \times 2 = 14$

12 $\underline{\quad} \times 2 = 16$

13 $\underline{\quad} \times 2 = 10$

14 $\underline{\quad} \times 2 = 18$

15 $\underline{\quad} \times 2 = 12$

16 $\underline{\quad} \times 2 = 20$

17 $\underline{\quad} \times 2 = 4$

18 $\underline{\quad} \times 2 = 8$

4. Word problems: multiplying

Read each problem. Write the answer.

- 19 Ravi filled 4 hutches with 4 carrots in each. Besides those, Ravi has 2 treats.

How many carrots does Ravi have in all?

The 5 and 10 Times Tables

WORKED EXAMPLE

$$2 \times 5 = \underline{10}$$

5. The 5 times table

Work out each product.

1 $6 \times 5 = \underline{\quad}$

2 $10 \times 5 = \underline{\quad}$

3 $5 \times 5 = \underline{\quad}$

4 $9 \times 5 = \underline{\quad}$

5 $7 \times 5 = \underline{\quad}$

6 $8 \times 5 = \underline{\quad}$

7 $4 \times 5 = \underline{\quad}$

6. The 10 times table

Work out each product.

8 $5 \times 10 = \underline{\quad}$

9 $9 \times 10 = \underline{\quad}$

10 $6 \times 10 = \underline{\quad}$

11 $10 \times 10 = \underline{\quad}$

12 $7 \times 10 = \underline{\quad}$

13 $8 \times 10 = \underline{\quad}$

14 $2 \times 10 = \underline{\quad}$

15 $4 \times 10 = \underline{\quad}$

16 $3 \times 10 = \underline{\quad}$

17 $1 \times 10 = \underline{\quad}$

7. Word problems: multiplying

Read each problem. Write the answer.

- 18 Dana filled 6 hutches with 3 food pellets in each.

How many food pellets does Dana have in all?

- 19 Dev laid out 6 rows of bread rolls, 8 to a row. Dev also has 4 cupcakes.

How many bread rolls are laid out?

The 3 and 4 Times Tables

8. The 3 times table

Work out each product.

1 $6 \times 3 = \underline{\quad}$

2 $10 \times 3 = \underline{\quad}$

3 $5 \times 3 = \underline{\quad}$

4 $9 \times 3 = \underline{\quad}$

5 $7 \times 3 = \underline{\quad}$

6 $8 \times 3 = \underline{\quad}$

7 $4 \times 3 = \underline{\quad}$

8 $1 \times 3 = \underline{\quad}$

9 $2 \times 3 = \underline{\quad}$

10 $3 \times 3 = \underline{\quad}$

9. The 4 times table

Work out each product.

11 $7 \times 4 = \underline{\quad}$

12 $9 \times 4 = \underline{\quad}$

13 $5 \times 4 = \underline{\quad}$

14 $10 \times 4 = \underline{\quad}$

15 $6 \times 4 = \underline{\quad}$

16 $8 \times 4 = \underline{\quad}$

17 $2 \times 4 = \underline{\quad}$

18 $1 \times 4 = \underline{\quad}$

19 $4 \times 4 = \underline{\quad}$

20 $3 \times 4 = \underline{\quad}$

10. Word problems: multiplying

Read each problem. Write the answer.

- 21 Maya filled 4 crates with 6 folders in each.

How many folders does Maya have in all?

- 22 Jordan laid out 4 rows of notebooks, 9 to a row.

How many notebooks are laid out?

The 6 and 7 Times Tables

11. The 6 times table

Work out each product.

1 $5 \times 6 = \underline{\quad}$

2 $9 \times 6 = \underline{\quad}$

3 $7 \times 6 = \underline{\quad}$

4 $10 \times 6 = \underline{\quad}$

5 $6 \times 6 = \underline{\quad}$

6 $8 \times 6 = \underline{\quad}$

7 $2 \times 6 = \underline{\quad}$

8 $3 \times 6 = \underline{\quad}$

9 $4 \times 6 = \underline{\quad}$

10 $1 \times 6 = \underline{\quad}$

12. The 7 times table

Work out each product.

11 $7 \times 7 = \underline{\quad}$

12 $9 \times 7 = \underline{\quad}$

13 $5 \times 7 = \underline{\quad}$

14 $10 \times 7 = \underline{\quad}$

15 $6 \times 7 = \underline{\quad}$

16 $8 \times 7 = \underline{\quad}$

17 $3 \times 7 = \underline{\quad}$

18 $2 \times 7 = \underline{\quad}$

19 $1 \times 7 = \underline{\quad}$

20 $4 \times 7 = \underline{\quad}$

13. Missing factors: the 7 times table

Write the missing number in each one.

21 $\underline{\quad} \times 7 = 49$

22 $\underline{\quad} \times 7 = 63$

23 $\underline{\quad} \times 7 = 42$

24 $\underline{\quad} \times 7 = 56$

25 $\underline{\quad} \times 7 = 35$

14. Rounding numbers

Round each number to the nearest 10.

26 $141 \approx \underline{\quad}$

27 $914 \approx \underline{\quad}$

28 $546 \approx \underline{\quad}$

29 $361 \approx \underline{\quad}$

30 $585 \approx \underline{\quad}$

31 $878 \approx \underline{\quad}$

32 $87 \approx \underline{\quad}$

33 $233 \approx \underline{\quad}$

34 $253 \approx \underline{\quad}$

35 $286 \approx \underline{\quad}$

The 8 and 9 Times Tables

15. The 8 times table

Work out each product.

1 $7 \times 8 = \underline{\quad}$

2 $10 \times 8 = \underline{\quad}$

3 $5 \times 8 = \underline{\quad}$

4 $9 \times 8 = \underline{\quad}$

5 $6 \times 8 = \underline{\quad}$

6 $8 \times 8 = \underline{\quad}$

7 $1 \times 8 = \underline{\quad}$

8 $3 \times 8 = \underline{\quad}$

9 $2 \times 8 = \underline{\quad}$

10 $4 \times 8 = \underline{\quad}$

16. The 9 times table

Work out each product.

11 $7 \times 9 = \underline{\quad}$

12 $8 \times 9 = \underline{\quad}$

13 $5 \times 9 = \underline{\quad}$

14 $9 \times 9 = \underline{\quad}$

15 $6 \times 9 = \underline{\quad}$

16 $10 \times 9 = \underline{\quad}$

17 $1 \times 9 = \underline{\quad}$

18 $4 \times 9 = \underline{\quad}$

19 $2 \times 9 = \underline{\quad}$

20 $3 \times 9 = \underline{\quad}$

17. Word problems: multiplying

Read each problem. Write the answer.

- 21 Ravi set out 5 equal rows with 5 food pellets in each row.

How many food pellets are there in all?

- 22 Rosa filled 3 trays with 9 bread rolls in each. Rosa has 8 cupcakes as well.

How many bread rolls does Rosa have in all?

WORKED EXAMPLE

$$4 \times 2 = \underline{8}$$

18. Multiplication

Work out each product.

- | | | | |
|-------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| 1 $3 \times 9 = \underline{\quad}$ | 2 $9 \times 7 = \underline{\quad}$ | 3 $8 \times 3 = \underline{\quad}$ | 4 $10 \times 7 = \underline{\quad}$ |
| 5 $2 \times 10 = \underline{\quad}$ | 6 $9 \times 10 = \underline{\quad}$ | 7 $8 \times 7 = \underline{\quad}$ | 8 $4 \times 4 = \underline{\quad}$ |
| 9 $5 \times 9 = \underline{\quad}$ | 10 $7 \times 9 = \underline{\quad}$ | 11 $7 \times 5 = \underline{\quad}$ | 12 $10 \times 9 = \underline{\quad}$ |
| 13 $6 \times 7 = \underline{\quad}$ | 14 $6 \times 3 = \underline{\quad}$ | 15 $5 \times 8 = \underline{\quad}$ | 16 $6 \times 8 = \underline{\quad}$ |
| 17 $5 \times 4 = \underline{\quad}$ | 18 $8 \times 10 = \underline{\quad}$ | 19 $10 \times 6 = \underline{\quad}$ | 20 $6 \times 5 = \underline{\quad}$ |
| 21 $8 \times 5 = \underline{\quad}$ | 22 $9 \times 9 = \underline{\quad}$ | 23 $9 \times 5 = \underline{\quad}$ | 24 $9 \times 4 = \underline{\quad}$ |

19. Word problems: multiplying

Read each problem. Write the answer.

- 25 Dana set out 3 equal rows with 6 water bottles in each row. Besides those, Dana has 4 food pellets.

How many water bottles are there in all?

- 26 Rosa set out 6 equal rows with 9 croissants in each row.

How many croissants are there in all?

- 27 Courtney arranged water bottles in 6 rows with 4 in every row.

How many water bottles did Courtney arrange?

- 28 Kwame filled 6 trays with 5 cupcakes in each.

How many cupcakes does Kwame have in all?

Dividing by 2, 5 and 10

WORKED EXAMPLE

$$4 \div 2 = \underline{2}$$

20. Dividing by 2

Work out each quotient.

1 $12 \div 2 = \underline{\quad}$

2 $20 \div 2 = \underline{\quad}$

3 $14 \div 2 = \underline{\quad}$

4 $18 \div 2 = \underline{\quad}$

5 $10 \div 2 = \underline{\quad}$

6 $16 \div 2 = \underline{\quad}$

7 $2 \div 2 = \underline{\quad}$

8 $6 \div 2 = \underline{\quad}$

21. Dividing by 5

Work out each quotient.

9 $25 \div 5 = \underline{\quad}$

10 $40 \div 5 = \underline{\quad}$

11 $30 \div 5 = \underline{\quad}$

12 $45 \div 5 = \underline{\quad}$

13 $35 \div 5 = \underline{\quad}$

14 $50 \div 5 = \underline{\quad}$

15 $10 \div 5 = \underline{\quad}$

16 $5 \div 5 = \underline{\quad}$

17 $15 \div 5 = \underline{\quad}$

18 $20 \div 5 = \underline{\quad}$

22. Dividing by 10

Work out each quotient.

19 $50 \div 10 = \underline{\quad}$

20 $80 \div 10 = \underline{\quad}$

21 $70 \div 10 = \underline{\quad}$

22 $90 \div 10 = \underline{\quad}$

23 $60 \div 10 = \underline{\quad}$

24 $100 \div 10 = \underline{\quad}$

25 $30 \div 10 = \underline{\quad}$

26 $20 \div 10 = \underline{\quad}$

27 $40 \div 10 = \underline{\quad}$

28 $10 \div 10 = \underline{\quad}$

23. Word problems: dividing

Read each problem. Write the answer.

- 29 Rosa put 18 cookies equally into 3 trays.

How many cookies went in each tray?

- 30 45 cookies are arranged in 5 rows, with the same number in every row.

How many cookies stand in one row?

- 31 12 cookies are arranged in 2 rows, with the same number in every row.

How many cookies stand in one row?

Dividing by 3, 4 and 6

24. Dividing by 3

Work out each quotient.

1 $18 \div 3 = \underline{\quad}$

2 $24 \div 3 = \underline{\quad}$

3 $21 \div 3 = \underline{\quad}$

4 $30 \div 3 = \underline{\quad}$

5 $15 \div 3 = \underline{\quad}$

6 $27 \div 3 = \underline{\quad}$

7 $9 \div 3 = \underline{\quad}$

8 $12 \div 3 = \underline{\quad}$

9 $6 \div 3 = \underline{\quad}$

10 $3 \div 3 = \underline{\quad}$

25. Dividing by 4

Work out each quotient.

11 $24 \div 4 = \underline{\quad}$

12 $36 \div 4 = \underline{\quad}$

13 $28 \div 4 = \underline{\quad}$

14 $32 \div 4 = \underline{\quad}$

15 $20 \div 4 = \underline{\quad}$

16 $40 \div 4 = \underline{\quad}$

17 $4 \div 4 = \underline{\quad}$

18 $8 \div 4 = \underline{\quad}$

19 $16 \div 4 = \underline{\quad}$

20 $12 \div 4 = \underline{\quad}$

26. Dividing by 6

Work out each quotient.

21 $42 \div 6 = \underline{\quad}$

22 $48 \div 6 = \underline{\quad}$

23 $30 \div 6 = \underline{\quad}$

24 $54 \div 6 = \underline{\quad}$

25 $36 \div 6 = \underline{\quad}$

26 $60 \div 6 = \underline{\quad}$

27 $18 \div 6 = \underline{\quad}$

28 $24 \div 6 = \underline{\quad}$

29 $6 \div 6 = \underline{\quad}$

30 $12 \div 6 = \underline{\quad}$

27. Word problems: dividing

Read each problem. Write the answer.

- 31 Rosa put 18 cookies equally into 3 trays.

How many cookies went in each tray?

Dividing by 7, 8 and 9

28. Dividing by 7

Work out each quotient.

1 $42 \div 7 = \underline{\quad}$

2 $56 \div 7 = \underline{\quad}$

3 $35 \div 7 = \underline{\quad}$

4 $70 \div 7 = \underline{\quad}$

5 $49 \div 7 = \underline{\quad}$

6 $63 \div 7 = \underline{\quad}$

7 $14 \div 7 = \underline{\quad}$

8 $28 \div 7 = \underline{\quad}$

9 $21 \div 7 = \underline{\quad}$

10 $7 \div 7 = \underline{\quad}$

29. Dividing by 8

Work out each quotient.

11 $48 \div 8 = \underline{\quad}$

12 $80 \div 8 = \underline{\quad}$

13 $40 \div 8 = \underline{\quad}$

14 $72 \div 8 = \underline{\quad}$

15 $56 \div 8 = \underline{\quad}$

16 $64 \div 8 = \underline{\quad}$

17 $8 \div 8 = \underline{\quad}$

18 $16 \div 8 = \underline{\quad}$

19 $24 \div 8 = \underline{\quad}$

20 $32 \div 8 = \underline{\quad}$

30. Dividing by 9

Work out each quotient.

21 $54 \div 9 = \underline{\quad}$

22 $81 \div 9 = \underline{\quad}$

23 $63 \div 9 = \underline{\quad}$

24 $90 \div 9 = \underline{\quad}$

25 $45 \div 9 = \underline{\quad}$

26 $72 \div 9 = \underline{\quad}$

27 $27 \div 9 = \underline{\quad}$

28 $9 \div 9 = \underline{\quad}$

29 $36 \div 9 = \underline{\quad}$

30 $18 \div 9 = \underline{\quad}$

31. Word problems: dividing

Read each problem. Write the answer.

- 31 Priya put 10 notebooks equally into 2 shelves.

How many notebooks went in each shelf?

- 32 Farah put 35 food pellets equally into 5 hutches.

How many food pellets went in each hutch?

- 33 Dana set out 25 water bottles in 5 equal rows.

How many water bottles are in each row?

Word Problems: Multiplication

WORKED EXAMPLE

Lucia filled 3 boxes with 5 croissants in each.

How many croissants does Lucia have in all?

ANSWER: $3 \times 5 = 15$ croissants

32. Word problems: multiplying

Read each problem. Write the answer.

- 1 Marian arranged cookies in 6 rows with 4 in every row.

How many cookies did Marian arrange?

- 2 Ana set out 5 equal rows with 8 books in each row.

How many books are there in all?

- 3 Ravi arranged treats in 6 rows with 4 in every row.

How many treats did Ravi arrange?

- 4 Ana arranged notebooks in 4 rows with 8 in every row.

How many notebooks did Ana arrange?

- 5 Lucia filled 3 boxes with 6 croissants in each.

How many croissants does Lucia have in all?

- 6 Suki filled 4 feed bags with 7 treats in each.

How many treats does Suki have in all?

33. Dividing by 2

Work out each quotient.

7 $12 \div 2 = \underline{\quad}$

8 $16 \div 2 = \underline{\quad}$

9 $10 \div 2 = \underline{\quad}$

10 $20 \div 2 = \underline{\quad}$

11 $14 \div 2 = \underline{\quad}$

12 $18 \div 2 = \underline{\quad}$

Word Problems: Division

WORKED EXAMPLE

Ravi put 24 treats equally into 6 hutches.

How many treats went in each hutch?

ANSWER: $24 \div 6 = 4$ treats

34. Word problems: dividing

Read each problem. Write the answer.

- 1 Marian packed 40 croissants into trays of 8.

How many trays did Marian fill?

- 2 Kwame set out 40 bread rolls in 5 equal rows.

How many bread rolls are in each row?

- 3 Jordan set out 25 notebooks in 5 equal rows. Jordan also has 8 books.

How many notebooks are in each row?

- 4 45 cookies are arranged in 5 rows, with the same number in every row.

How many cookies stand in one row?

- 5 Kwame laid out 48 cupcakes, putting 8 in every row.

How many rows did Kwame make?

- 6 21 notebooks are arranged in 3 rows, with the same number in every row.

How many notebooks stand in one row?

35. Rounding numbers

Round each number to the nearest 10.

7 **227** $\approx$ _____

8 **546** $\approx$ _____

9 **669** $\approx$ _____

10 **293** $\approx$ _____

11 **72** $\approx$ _____

12 **502** $\approx$ _____

Equal Parts

WORKED EXAMPLE

$$= \frac{1}{3}$$

36. Name the fraction

Answer each question.



37. Dividing by 7

Work out each quotient.

13 $42 \div 7 = \underline{\quad}$

14 $56 \div 7 = \underline{\quad}$

15 $49 \div 7 = \underline{\quad}$

16 $70 \div 7 = \underline{\quad}$

17 $35 \div 7 = \underline{\quad}$

18 $63 \div 7 = \underline{\quad}$

19 $28 \div 7 = \underline{\quad}$

20 $21 \div 7 = \underline{\quad}$

21 $7 \div 7 = \underline{\quad}$

22 $14 \div 7 = \underline{\quad}$

Comparing Fractions

WORKED EXAMPLE

$$\frac{1}{8} < \frac{2}{5}$$

38. Comparing fractions

Write $>$, $=$, or $<$ between each pair of fractions.

1 $\frac{1}{8} \bigcirc \frac{3}{4}$

2 $\frac{4}{6} \bigcirc \frac{4}{5}$

3 $\frac{1}{2} \bigcirc \frac{2}{5}$

4 $\frac{4}{7} \bigcirc \frac{3}{7}$

5 $\frac{7}{8} \bigcirc \frac{1}{2}$

6 $\frac{2}{7} \bigcirc \frac{3}{4}$

7 $\frac{5}{8} \bigcirc \frac{2}{8}$

8 $\frac{6}{8} \bigcirc \frac{1}{6}$

9 $\frac{1}{7} \bigcirc \frac{1}{4}$

10 $\frac{3}{7} \bigcirc \frac{4}{6}$

11 $\frac{5}{7} \bigcirc \frac{4}{7}$

12 $\frac{1}{2} \bigcirc \frac{1}{8}$

13 $\frac{2}{6} \bigcirc \frac{5}{8}$

14 $\frac{2}{7} \bigcirc \frac{5}{6}$

15 $\frac{4}{8} \bigcirc \frac{2}{8}$

16 $\frac{2}{8} \bigcirc \frac{2}{6}$

39. Rounding numbers

Round each number to the nearest 10.

17 $713 \approx \underline{\hspace{2cm}}$

18 $14 \approx \underline{\hspace{2cm}}$

19 $831 \approx \underline{\hspace{2cm}}$

20 $617 \approx \underline{\hspace{2cm}}$

21 $694 \approx \underline{\hspace{2cm}}$

22 $111 \approx \underline{\hspace{2cm}}$

23 $449 \approx \underline{\hspace{2cm}}$

24 $877 \approx \underline{\hspace{2cm}}$

25 $302 \approx \underline{\hspace{2cm}}$

26 $666 \approx \underline{\hspace{2cm}}$

WORKED EXAMPLE

3, 13, 23, 33, 43**40. Number patterns**

Find the missing number in each pattern.

- | | | |
|----------------------|----------------------|----------------------|
| 1 1, 9, 17, __, 33 | 2 6, 16, __, 36, 46 | 3 3, 13, __, 33, 43 |
| 4 8, __, 20, 26, 32 | 5 3, __, 9, 12, 15 | 6 8, 12, __, 20, 24 |
| 7 6, 11, 16, __, 26 | 8 8, 18, __, 38, 48 | 9 4, 8, __, 16, 20 |
| 10 3, 14, __, 36, 47 | 11 2, 6, 10, __, 18 | 12 3, 7, 11, __, 19 |
| 13 5, __, 19, 26, 33 | 14 3, 15, 27, __, 51 | 15 1, 8, __, 22, 29 |
| 16 9, __, 31, 42, 53 | 17 9, 12, 15, __, 21 | 18 4, 13, __, 31, 40 |
| 19 5, 13, __, 29, 37 | 20 8, 10, 12, __, 16 | 21 7, 15, 23, __, 39 |
| 22 8, 17, __, 35, 44 | 23 1, 4, 7, __, 13 | 24 3, 7, __, 15, 19 |
| 25 1, 3, 5, __, 9 | 26 2, __, 12, 17, 22 | 27 9, __, 21, 27, 33 |
| 28 6, 17, 28, __, 50 | 29 1, __, 11, 16, 21 | 30 6, __, 14, 18, 22 |
| 31 7, 10, __, 16, 19 | 32 4, __, 24, 34, 44 | 33 2, __, 14, 20, 26 |
| 34 9, 14, __, 24, 29 | 35 9, 20, 31, __, 53 | 36 2, __, 10, 14, 18 |
| 37 9, __, 25, 33, 41 | 38 4, 15, __, 37, 48 | 39 7, 11, __, 19, 23 |
| 40 3, __, 17, 24, 31 | 41 4, __, 14, 19, 24 | 42 5, 7, __, 11, 13 |
| 43 4, __, 22, 31, 40 | 44 7, __, 11, 13, 15 | 45 9, 21, 33, __, 57 |
| 46 2, 12, __, 32, 42 | 47 3, 6, __, 12, 15 | 48 7, 16, __, 34, 43 |
| 49 5, 9, 13, __, 21 | 50 6, __, 30, 42, 54 | |

41. Dividing by 7

Work out each quotient.

- | | | | |
|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 51 $35 \div 7 = \underline{\quad}$ | 52 $63 \div 7 = \underline{\quad}$ | 53 $42 \div 7 = \underline{\quad}$ | 54 $70 \div 7 = \underline{\quad}$ |
| 55 $49 \div 7 = \underline{\quad}$ | 56 $56 \div 7 = \underline{\quad}$ | 57 $7 \div 7 = \underline{\quad}$ | 58 $14 \div 7 = \underline{\quad}$ |
| 59 $28 \div 7 = \underline{\quad}$ | 60 $21 \div 7 = \underline{\quad}$ | | |

WORKED EXAMPLE

Which number is the odd one out?

27

37

21

58

Why? **ANSWER:** the other three are all odd.

42. Reasoning puzzles

Read each question and write what you work out.

- 1 $\bullet + \bullet + \bullet = 45$ and $\bullet + \blacklozenge = 35$. What is $\blacklozenge$?

Why?

- 2 An odd number times an even number is odd.

always

sometimes

never

Why?

- 3 A number that ends in 5 is even.

always

sometimes

never

Why?

- 4 Theo wrote $12 \times 12 = 24$. Write the correct answer.

Why?

- 5 Which number is the odd one out?

42

10

12

54

Why?

- 6 $\blacksquare + \blacksquare = 18$ and $\blacktriangle - \blacksquare = 3$. What is $\blacktriangle$?

Why?

- 7 Noor wrote $9 \times 3 = 12$. Write the correct answer.

Why?

Telling the Time

WORKED EXAMPLE

$$10:10 \rightarrow 10:50 = \underline{40} \text{ min}$$

43. Elapsed time

Write how many minutes pass between the two times.

- | | |
|--|--|
| 1 $12:10 \rightarrow 1:05 = \underline{\hspace{1cm}}$
min | 2 $8:40 \rightarrow 9:55 = \underline{\hspace{1cm}}$
min |
| 3 $1:50 \rightarrow 2:45 = \underline{\hspace{1cm}}$
min | 4 $2:45 \rightarrow 3:55 = \underline{\hspace{1cm}}$
min |
| 5 $2:10 \rightarrow 3:10 = \underline{\hspace{1cm}}$
min | 6 $7:20 \rightarrow 8:40 = \underline{\hspace{1cm}}$
min |
| 7 $5:30 \rightarrow 6:35 = \underline{\hspace{1cm}}$
min | 8 $8:00 \rightarrow 9:05 = \underline{\hspace{1cm}}$
min |
| 9 $6:50 \rightarrow 8:10 = \underline{\hspace{1cm}}$
min | 10 $1:35 \rightarrow 2:50 = \underline{\hspace{1cm}}$
min |
| 11 $1:55 \rightarrow 2:55 = \underline{\hspace{1cm}}$
min | 12 $10:15 \rightarrow 11:25 = \underline{\hspace{1cm}}$
min |
| 13 $7:30 \rightarrow 8:45 = \underline{\hspace{1cm}}$
min | 14 $2:30 \rightarrow 3:20 = \underline{\hspace{1cm}}$
min |
| 15 $12:25 \rightarrow 1:35 = \underline{\hspace{1cm}}$
min | 16 $11:10 \rightarrow 12:30 = \underline{\hspace{1cm}}$
min |
| 17 $1:20 \rightarrow 2:15 = \underline{\hspace{1cm}}$
min | 18 $2:10 \rightarrow 3:15 = \underline{\hspace{1cm}}$
min |
| 19 $10:10 \rightarrow 11:20 = \underline{\hspace{1cm}}$
min | 20 $2:25 \rightarrow 3:25 = \underline{\hspace{1cm}}$
min |
| 21 $12:10 \rightarrow 1:35 = \underline{\hspace{1cm}}$
min | 22 $9:10 \rightarrow 10:40 = \underline{\hspace{1cm}}$
min |
| 23 $8:20 \rightarrow 9:50 = \underline{\hspace{1cm}}$
min | 24 $7:00 \rightarrow 8:20 = \underline{\hspace{1cm}}$
min |
| 25 $6:45 \rightarrow 8:15 = \underline{\hspace{1cm}}$
min | 26 $4:35 \rightarrow 5:50 = \underline{\hspace{1cm}}$
min |

44. Comparing fractions

Write >, =, or < between each pair of fractions.

27 $\frac{4}{7} \bigcirc \frac{1}{6}$

28 $\frac{6}{7} \bigcirc \frac{4}{6}$

29 $\frac{4}{6} \bigcirc \frac{4}{5}$

30 $\frac{2}{5} \bigcirc \frac{1}{5}$

31 $\frac{4}{6} \bigcirc \frac{3}{4}$

32 $\frac{4}{8} \bigcirc \frac{1}{6}$

33 $\frac{5}{6} \bigcirc \frac{2}{5}$

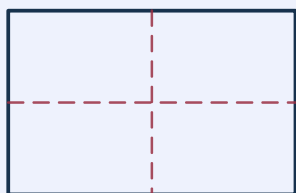
34 $\frac{4}{5} \bigcirc \frac{5}{7}$

35 $\frac{2}{7} \bigcirc \frac{4}{7}$

36 $\frac{3}{6} \bigcirc \frac{4}{6}$

Naming Shapes

WORKED EXAMPLE



hexagon

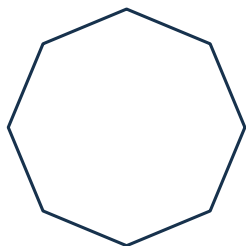
rectangle

triangle

45. Name the shape

Circle the name of each shape.

1

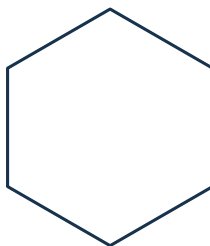


octagon

pentagon

triangle

2

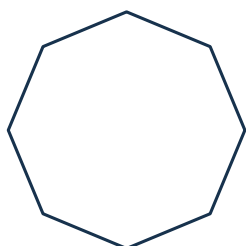


hexagon

rectangle

square

3

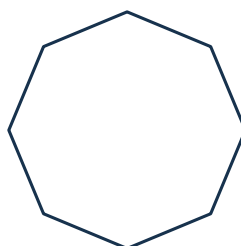


octagon

pentagon

square

4

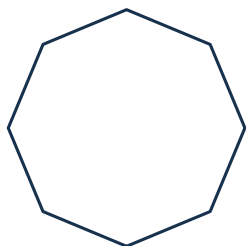


octagon

rectangle

triangle

5



hexagon

octagon

pentagon

6

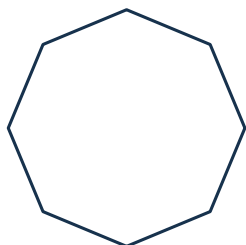


hexagon

rectangle

square

7

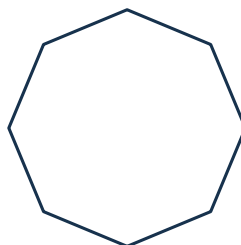


octagon

pentagon

rectangle

8



hexagon

octagon

rectangle

46. Number patterns

Find the missing number in each pattern.

9 2, 9, ____, 23, 30

10 9, ____, 19, 24, 29

11 6, 16, ____, 36, 46

12 2, 9, 16, ____, 30

13 8, 10, ____, 14, 16

14 5, 16, ____, 38, 49

15 8, 16, 24, ____, 40

16 7, ____, 17, 22, 27

Area by Counting Squares

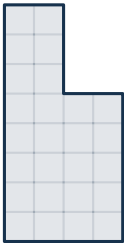
WORKED EXAMPLE

**15** squares

47. Area by counting squares

Count the squares to find the area of each figure.

1



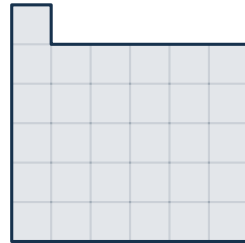
_____ squares

2



_____ squares

3



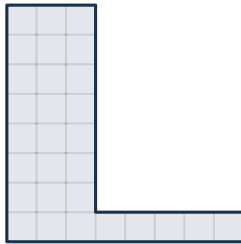
_____ squares

4



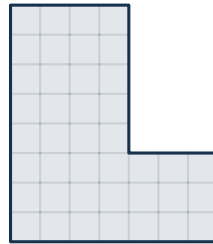
_____ squares

5



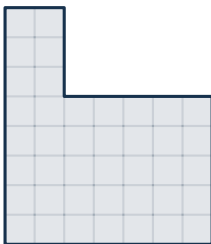
_____ squares

6



_____ squares

7



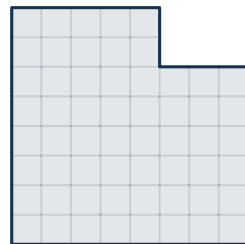
_____ squares

8



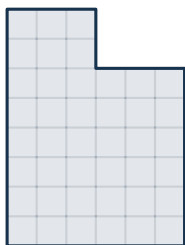
_____ squares

9



_____ squares

10



_____ squares

48. Rounding numbers

Round each number to the nearest 10.

11 **689** $\approx$ _____

12 **493** $\approx$ _____

13 **901** $\approx$ _____

14 **141** $\approx$ _____

15 **824** $\approx$ _____

16 **268** $\approx$ _____

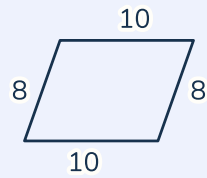
17 **891** $\approx$ _____

18 **66** $\approx$ _____

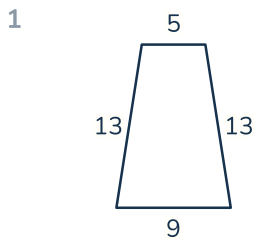
19 **768** $\approx$ _____

20 **72** $\approx$ _____

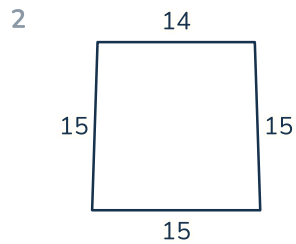
WORKED EXAMPLE

**36** cm**49. Perimeter**

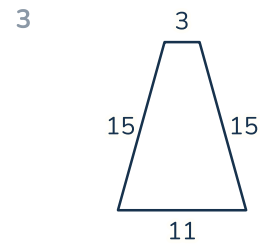
Add every side. All lengths are in centimeters.



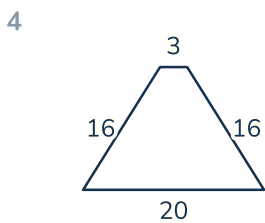
_____ cm



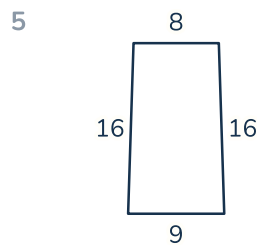
_____ cm



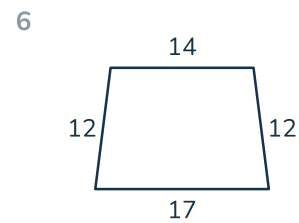
_____ cm



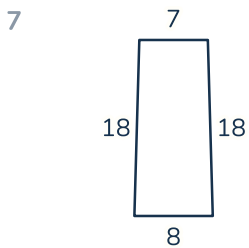
_____ cm



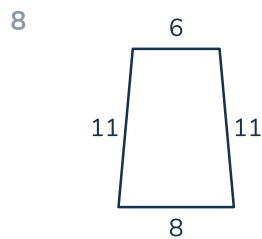
_____ cm



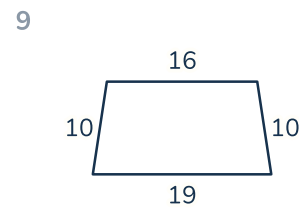
_____ cm



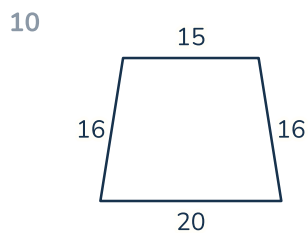
_____ cm



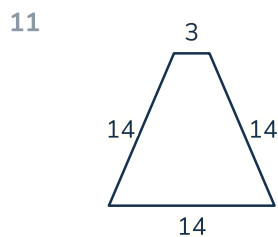
_____ cm



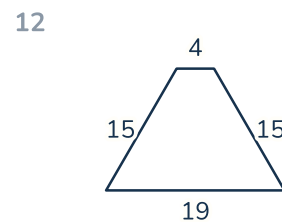
_____ cm



_____ cm



_____ cm



_____ cm

50. Elapsed time

Write how many minutes pass between the two times.

13 $1:40 \rightarrow 2:20 = \underline{\hspace{1cm}}$
min

15 $10:30 \rightarrow 11:20 = \underline{\hspace{1cm}}$
min

17 $5:40 \rightarrow 6:25 = \underline{\hspace{1cm}}$
min

19 $6:00 \rightarrow 7:30 = \underline{\hspace{1cm}}$
min

21 $6:55 \rightarrow 8:20 = \underline{\hspace{1cm}}$
min

14 $2:45 \rightarrow 4:00 = \underline{\hspace{1cm}}$
min

16 $2:45 \rightarrow 4:10 = \underline{\hspace{1cm}}$
min

18 $2:35 \rightarrow 3:40 = \underline{\hspace{1cm}}$
min

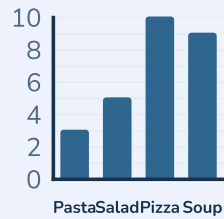
20 $2:25 \rightarrow 3:15 = \underline{\hspace{1cm}}$
min

22 $3:45 \rightarrow 5:15 = \underline{\hspace{1cm}}$
min

Bar Graphs and Line Plots

WORKED EXAMPLE

Lunches chosen today



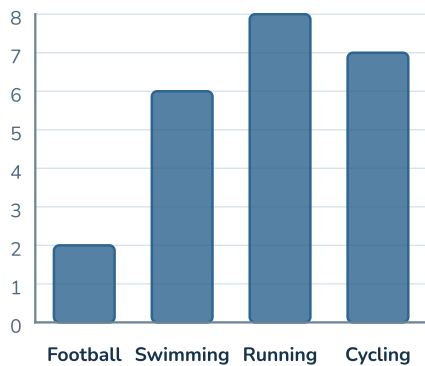
How many more chose salad and pizza than chose pasta?

12

51. Bar graphs

Read each bar graph and answer the question.

Our favorite sport



- 1 How many more chose swimming and running than chose football?

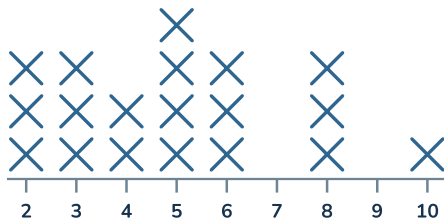
- 2 How many more chose football and swimming than chose cycling?

- 3 How many more chose football and running than chose swimming?

52. Line plots

Read each line plot and answer the question.

Length of worms we found (inches)



- 4 How many worms were longer than 3 inches?

—

- 5 How many worms were longer than 4 inches?

—

- 6 How many worms were longer than 5 inches?

—

Picture Graphs

WORKED EXAMPLE

Our favorite sport

Football	••
Swimming	•
Running	•••••••••
Cycling	••••

How many more chose swimming and running than chose football?

9

Each ● stands for 1.

53. Picture graphs

Read each picture graph and answer the question.

Books read this term

Ali	•••••••••
Bea	•
Caz	•••••
Dev	•••••••

Each ● stands for 1.

- 1 How many fewer for Bea than for Ali?

—

- 2 How many more for Ali than for Caz?

—

- 3 How many fewer for Dev than for Ali?

—

Lunches chosen today

Pasta	••••••••
Salad	•••••••••
Pizza	••••••••••
Soup	•

Each ● stands for 1.

- 4 How many more chose salad and pizza than chose pasta?

—

- 5 How many more chose pasta and pizza than chose salad?

—

- 6 How many more chose pasta and salad than chose pizza?

—

54. Dividing by 7

Work out each quotient.

7 $49 \div 7 = \underline{\quad}$

8 $70 \div 7 = \underline{\quad}$

9 $42 \div 7 = \underline{\quad}$

10 $63 \div 7 = \underline{\quad}$

11 $35 \div 7 = \underline{\quad}$

12 $56 \div 7 = \underline{\quad}$

Review: Times Tables and Division

WORKED EXAMPLE

$$4 \times 6 = \underline{24}$$

55. Multiplication

Work out each product.

1 $9 \times 3 = \underline{\quad}$

2 $10 \times 8 = \underline{\quad}$

3 $3 \times 7 = \underline{\quad}$

4 $10 \times 7 = \underline{\quad}$

5 $6 \times 5 = \underline{\quad}$

6 $9 \times 9 = \underline{\quad}$

7 $10 \times 9 = \underline{\quad}$

8 $8 \times 2 = \underline{\quad}$

9 $6 \times 10 = \underline{\quad}$

10 $10 \times 10 = \underline{\quad}$

11 $4 \times 4 = \underline{\quad}$

12 $7 \times 6 = \underline{\quad}$

56. Division

Work out each quotient.

13 $16 \div 8 = \underline{\quad}$

14 $56 \div 7 = \underline{\quad}$

15 $32 \div 4 = \underline{\quad}$

16 $60 \div 10 = \underline{\quad}$

17 $30 \div 6 = \underline{\quad}$

18 $100 \div 10 = \underline{\quad}$

19 $80 \div 10 = \underline{\quad}$

20 $24 \div 4 = \underline{\quad}$

21 $40 \div 10 = \underline{\quad}$

22 $50 \div 10 = \underline{\quad}$

23 $21 \div 7 = \underline{\quad}$

24 $40 \div 5 = \underline{\quad}$

57. Word problems: mixed

Read each problem. Write the answer.

- 25 Elena and Noah have 39 books in all, and 26 belong to Elena.

How many books does Noah have?

- 26 Ana collected 23 tickets this morning and ended the day with 58 tickets.

How many tickets did Ana have at the start of the day?

- 27 Rosa packed 15 croissants into boxes of 3.

How many boxes did Rosa fill?

- 28 Suki now has 60 carrots after buying 28 more.

How many carrots did Suki have to begin with?

Answer Key (1 of 8)

Rounding to 10 and 100

Rounding numbers

1. $337 \approx 340$
2. $749 \approx 750$
3. $979 \approx 980$
4. $67 \approx 70$
5. $962 \approx 960$
6. $694 \approx 690$
7. $293 \approx 290$
8. $585 \approx 590$
9. $758 \approx 760$
10. $169 \approx 170$
11. $562 \approx 560$
12. $888 \approx 890$
13. $357 \approx 360$
14. $447 \approx 450$
15. $816 \approx 820$
16. $857 \approx 860$
17. $679 \approx 680$
18. $441 \approx 440$
19. $872 \approx 870$
20. $593 \approx 590$
21. $104 \approx 100$
22. $771 \approx 770$
23. $232 \approx 230$
24. $716 \approx 720$

Equal Groups: the 2 Times Table

The 2 times table

1. $5 \times 2 = 10$
2. $10 \times 2 = 20$
3. $7 \times 2 = 14$
4. $9 \times 2 = 18$
5. $6 \times 2 = 12$
6. $8 \times 2 = 16$
7. $1 \times 2 = 2$
8. $2 \times 2 = 4$
9. $3 \times 2 = 6$
10. $4 \times 2 = 8$

Missing factors: the 2 times table

11. $7 \times 2 = 14$
12. $8 \times 2 = 16$
13. $5 \times 2 = 10$
14. $9 \times 2 = 18$
15. $6 \times 2 = 12$

Equal Groups: the 2 Times Table (continued)

Missing factors: the 2 times table (continued)

16. $10 \times 2 = 20$
17. $2 \times 2 = 4$
18. $4 \times 2 = 8$

Word problems: multiplying

19. $4 \times 4 = 16$ carrots

The 5 and 10 Times Tables

The 5 times table

1. $6 \times 5 = 30$
2. $10 \times 5 = 50$
3. $5 \times 5 = 25$
4. $9 \times 5 = 45$
5. $7 \times 5 = 35$
6. $8 \times 5 = 40$
7. $4 \times 5 = 20$

The 10 times table

8. $5 \times 10 = 50$
9. $9 \times 10 = 90$
10. $6 \times 10 = 60$
11. $10 \times 10 = 100$
12. $7 \times 10 = 70$
13. $8 \times 10 = 80$
14. $2 \times 10 = 20$
15. $4 \times 10 = 40$
16. $3 \times 10 = 30$
17. $1 \times 10 = 10$

Word problems: multiplying

18. $6 \times 3 = 18$ food pellets
19. $6 \times 8 = 48$ bread rolls

The 3 and 4 Times Tables

The 3 times table

1. $6 \times 3 = 18$
2. $10 \times 3 = 30$
3. $5 \times 3 = 15$
4. $9 \times 3 = 27$
5. $7 \times 3 = 21$
6. $8 \times 3 = 24$
7. $4 \times 3 = 12$
8. $1 \times 3 = 3$
9. $2 \times 3 = 6$
10. $3 \times 3 = 9$

Answer Key (2 of 8)

The 3 and 4 Times Tables (continued)

The 4 times table

11. $7 \times 4 = 28$
12. $9 \times 4 = 36$
13. $5 \times 4 = 20$
14. $10 \times 4 = 40$
15. $6 \times 4 = 24$
16. $8 \times 4 = 32$
17. $2 \times 4 = 8$
18. $1 \times 4 = 4$
19. $4 \times 4 = 16$
20. $3 \times 4 = 12$

Word problems: multiplying

21. $4 \times 6 = 24$ folders
22. $4 \times 9 = 36$ notebooks

The 6 and 7 Times Tables

The 6 times table

1. $5 \times 6 = 30$
2. $9 \times 6 = 54$
3. $7 \times 6 = 42$
4. $10 \times 6 = 60$
5. $6 \times 6 = 36$
6. $8 \times 6 = 48$
7. $2 \times 6 = 12$
8. $3 \times 6 = 18$
9. $4 \times 6 = 24$
10. $1 \times 6 = 6$

The 7 times table

11. $7 \times 7 = 49$
12. $9 \times 7 = 63$
13. $5 \times 7 = 35$
14. $10 \times 7 = 70$
15. $6 \times 7 = 42$
16. $8 \times 7 = 56$
17. $3 \times 7 = 21$
18. $2 \times 7 = 14$
19. $1 \times 7 = 7$
20. $4 \times 7 = 28$

Missing factors: the 7 times table

21. $7 \times 7 = 49$
22. $9 \times 7 = 63$
23. $6 \times 7 = 42$
24. $8 \times 7 = 56$

The 6 and 7 Times Tables (continued)

Missing factors: the 7 times table (continued)

25. $5 \times 7 = 35$

Rounding numbers

26. $141 \approx 140$
27. $914 \approx 910$
28. $546 \approx 550$
29. $361 \approx 360$
30. $585 \approx 590$
31. $878 \approx 880$
32. $87 \approx 90$
33. $233 \approx 230$
34. $253 \approx 250$
35. $286 \approx 290$

The 8 and 9 Times Tables

The 8 times table

1. $7 \times 8 = 56$
2. $10 \times 8 = 80$
3. $5 \times 8 = 40$
4. $9 \times 8 = 72$
5. $6 \times 8 = 48$
6. $8 \times 8 = 64$
7. $1 \times 8 = 8$
8. $3 \times 8 = 24$
9. $2 \times 8 = 16$
10. $4 \times 8 = 32$

The 9 times table

11. $7 \times 9 = 63$
12. $8 \times 9 = 72$
13. $5 \times 9 = 45$
14. $9 \times 9 = 81$
15. $6 \times 9 = 54$
16. $10 \times 9 = 90$
17. $1 \times 9 = 9$
18. $4 \times 9 = 36$
19. $2 \times 9 = 18$
20. $3 \times 9 = 27$

Word problems: multiplying

21. $5 \times 5 = 25$ food pellets
22. $3 \times 9 = 27$ bread rolls

Mixed Times Tables

Multiplication

1. $3 \times 9 = 27$

Answer Key (3 of 8)

Mixed Times Tables (continued)

Multiplication (continued)

2. $9 \times 7 = 63$
3. $8 \times 3 = 24$
4. $10 \times 7 = 70$
5. $2 \times 10 = 20$
6. $9 \times 10 = 90$
7. $8 \times 7 = 56$
8. $4 \times 4 = 16$
9. $5 \times 9 = 45$
10. $7 \times 9 = 63$
11. $7 \times 5 = 35$
12. $10 \times 9 = 90$
13. $6 \times 7 = 42$
14. $6 \times 3 = 18$
15. $5 \times 8 = 40$
16. $6 \times 8 = 48$
17. $5 \times 4 = 20$
18. $8 \times 10 = 80$
19. $10 \times 6 = 60$
20. $6 \times 5 = 30$
21. $8 \times 5 = 40$
22. $9 \times 9 = 81$
23. $9 \times 5 = 45$
24. $9 \times 4 = 36$

Word problems: multiplying

25. $3 \times 6 = 18$ water bottles
26. $6 \times 9 = 54$ croissants
27. $6 \times 4 = 24$ water bottles
28. $6 \times 5 = 30$ cupcakes

Dividing by 2, 5 and 10

Dividing by 2

1. $12 \div 2 = 6$
2. $20 \div 2 = 10$
3. $14 \div 2 = 7$
4. $18 \div 2 = 9$
5. $10 \div 2 = 5$
6. $16 \div 2 = 8$
7. $2 \div 2 = 1$
8. $6 \div 2 = 3$

Dividing by 5

9. $25 \div 5 = 5$
10. $40 \div 5 = 8$
11. $30 \div 5 = 6$

Dividing by 2, 5 and 10 (continued)

Dividing by 5 (continued)

12. $45 \div 5 = 9$
13. $35 \div 5 = 7$
14. $50 \div 5 = 10$
15. $10 \div 5 = 2$
16. $5 \div 5 = 1$
17. $15 \div 5 = 3$
18. $20 \div 5 = 4$

Dividing by 10

19. $50 \div 10 = 5$
20. $80 \div 10 = 8$
21. $70 \div 10 = 7$
22. $90 \div 10 = 9$
23. $60 \div 10 = 6$
24. $100 \div 10 = 10$
25. $30 \div 10 = 3$
26. $20 \div 10 = 2$
27. $40 \div 10 = 4$
28. $10 \div 10 = 1$

Word problems: dividing

29. $18 \div 3 = 6$ cookies
30. $45 \div 5 = 9$ cookies
31. $12 \div 2 = 6$ cookies

Dividing by 3, 4 and 6

Dividing by 3

1. $18 \div 3 = 6$
2. $24 \div 3 = 8$
3. $21 \div 3 = 7$
4. $30 \div 3 = 10$
5. $15 \div 3 = 5$
6. $27 \div 3 = 9$
7. $9 \div 3 = 3$
8. $12 \div 3 = 4$
9. $6 \div 3 = 2$
10. $3 \div 3 = 1$

Dividing by 4

11. $24 \div 4 = 6$
12. $36 \div 4 = 9$
13. $28 \div 4 = 7$
14. $32 \div 4 = 8$
15. $20 \div 4 = 5$
16. $40 \div 4 = 10$

Answer Key (4 of 8)

Dividing by 3, 4 and 6 (continued)

Dividing by 4 (continued)

17. $4 \div 4 = 1$
18. $8 \div 4 = 2$
19. $16 \div 4 = 4$
20. $12 \div 4 = 3$

Dividing by 6

21. $42 \div 6 = 7$
22. $48 \div 6 = 8$
23. $30 \div 6 = 5$
24. $54 \div 6 = 9$
25. $36 \div 6 = 6$
26. $60 \div 6 = 10$
27. $18 \div 6 = 3$
28. $24 \div 6 = 4$
29. $6 \div 6 = 1$
30. $12 \div 6 = 2$

Word problems: dividing

31. $18 \div 3 = 6$ cookies

Dividing by 7, 8 and 9

Dividing by 7

1. $42 \div 7 = 6$
2. $56 \div 7 = 8$
3. $35 \div 7 = 5$
4. $70 \div 7 = 10$
5. $49 \div 7 = 7$
6. $63 \div 7 = 9$
7. $14 \div 7 = 2$
8. $28 \div 7 = 4$
9. $21 \div 7 = 3$
10. $7 \div 7 = 1$

Dividing by 8

11. $48 \div 8 = 6$
12. $80 \div 8 = 10$
13. $40 \div 8 = 5$
14. $72 \div 8 = 9$
15. $56 \div 8 = 7$
16. $64 \div 8 = 8$
17. $8 \div 8 = 1$
18. $16 \div 8 = 2$
19. $24 \div 8 = 3$
20. $32 \div 8 = 4$

Dividing by 7, 8 and 9 (continued)

Dividing by 9

21. $54 \div 9 = 6$
22. $81 \div 9 = 9$
23. $63 \div 9 = 7$
24. $90 \div 9 = 10$
25. $45 \div 9 = 5$
26. $72 \div 9 = 8$
27. $27 \div 9 = 3$
28. $9 \div 9 = 1$
29. $36 \div 9 = 4$
30. $18 \div 9 = 2$

Word problems: dividing

31. $10 \div 2 = 5$ notebooks
32. $35 \div 5 = 7$ food pellets
33. $25 \div 5 = 5$ water bottles

Word Problems: Multiplication

Word problems: multiplying

1. $6 \times 4 = 24$ cookies
2. $5 \times 8 = 40$ books
3. $6 \times 4 = 24$ treats
4. $4 \times 8 = 32$ notebooks
5. $3 \times 6 = 18$ croissants
6. $4 \times 7 = 28$ treats

Dividing by 2

7. $12 \div 2 = 6$
8. $16 \div 2 = 8$
9. $10 \div 2 = 5$
10. $20 \div 2 = 10$
11. $14 \div 2 = 7$
12. $18 \div 2 = 9$

Word Problems: Division

Word problems: dividing

1. $40 \div 8 = 5$ trays
2. $40 \div 5 = 8$ bread rolls
3. $25 \div 5 = 5$ notebooks
4. $45 \div 5 = 9$ cookies
5. $48 \div 8 = 6$ rows
6. $21 \div 3 = 7$ notebooks

Rounding numbers

7. $227 \approx 230$
8. $546 \approx 550$
9. $669 \approx 670$

Answer Key (5 of 8)

Word Problems: Division (continued)

Rounding numbers (continued)

10. $293 \approx 290$
11. $72 \approx 70$
12. $502 \approx 500$

Equal Parts

Name the fraction

1. $\frac{4}{5}$
2. $\frac{3}{5}$
3. $\frac{1}{4}$
4. $\frac{1}{6}$
5. $\frac{2}{5}$
6. $\frac{4}{6}$
7. $\frac{2}{4}$
8. $\frac{3}{5}$
9. $\frac{2}{6}$
10. $\frac{1}{3}$
11. $\frac{5}{6}$
12. $\frac{1}{5}$

Dividing by 7

13. $42 \div 7 = 6$
14. $56 \div 7 = 8$
15. $49 \div 7 = 7$
16. $70 \div 7 = 10$
17. $35 \div 7 = 5$
18. $63 \div 7 = 9$
19. $28 \div 7 = 4$
20. $21 \div 7 = 3$
21. $7 \div 7 = 1$
22. $14 \div 7 = 2$

Comparing Fractions

Comparing fractions

1. $\frac{1}{8} < \frac{3}{4}$
2. $\frac{4}{6} < \frac{4}{5}$
3. $\frac{1}{2} > \frac{2}{5}$
4. $\frac{4}{7} > \frac{3}{7}$
5. $\frac{7}{8} > \frac{1}{2}$
6. $\frac{2}{7} < \frac{3}{4}$
7. $\frac{5}{8} > \frac{2}{8}$
8. $\frac{6}{8} > \frac{1}{6}$
9. $\frac{1}{7} < \frac{1}{4}$
10. $\frac{3}{7} < \frac{4}{6}$
11. $\frac{5}{7} > \frac{4}{7}$

Comparing Fractions (continued)

Comparing fractions (continued)

12. $\frac{1}{2} > \frac{1}{8}$
13. $\frac{2}{6} < \frac{5}{8}$
14. $\frac{2}{7} < \frac{5}{6}$
15. $\frac{4}{8} > \frac{2}{8}$
16. $\frac{2}{8} < \frac{2}{6}$

Rounding numbers

17. $713 \approx 710$
18. $14 \approx 10$
19. $831 \approx 830$
20. $617 \approx 620$
21. $694 \approx 690$
22. $111 \approx 110$
23. $449 \approx 450$
24. $877 \approx 880$
25. $302 \approx 300$
26. $666 \approx 670$

Number Patterns

Number patterns

1. 1, 9, 17, [25], 33
2. 6, 16, [26], 36, 46
3. 3, 13, [23], 33, 43
4. 8, [14], 20, 26, 32
5. 3, [6], 9, 12, 15
6. 8, 12, [16], 20, 24
7. 6, 11, 16, [21], 26
8. 8, 18, [28], 38, 48
9. 4, 8, [12], 16, 20
10. 3, 14, [25], 36, 47
11. 2, 6, 10, [14], 18
12. 3, 7, 11, [15], 19
13. 5, [12], 19, 26, 33
14. 3, 15, 27, [39], 51
15. 1, 8, [15], 22, 29
16. 9, [20], 31, 42, 53
17. 9, 12, 15, [18], 21
18. 4, 13, [22], 31, 40
19. 5, 13, [21], 29, 37
20. 8, 10, 12, [14], 16
21. 7, 15, 23, [31], 39
22. 8, 17, [26], 35, 44
23. 1, 4, 7, [10], 13
24. 3, 7, [11], 15, 19

Answer Key (6 of 8)

Number Patterns (continued)

Number patterns (continued)

25. 1, 3, 5, [7], 9
26. 2, [7], 12, 17, 22
27. 9, [15], 21, 27, 33
28. 6, 17, 28, [39], 50
29. 1, [6], 11, 16, 21
30. 6, [10], 14, 18, 22
31. 7, 10, [13], 16, 19
32. 4, [14], 24, 34, 44
33. 2, [8], 14, 20, 26
34. 9, 14, [19], 24, 29
35. 9, 20, 31, [42], 53
36. 2, [6], 10, 14, 18
37. 9, [17], 25, 33, 41
38. 4, 15, [26], 37, 48
39. 7, 11, [15], 19, 23
40. 3, [10], 17, 24, 31
41. 4, [9], 14, 19, 24
42. 5, 7, [9], 11, 13
43. 4, [13], 22, 31, 40
44. 7, [9], 11, 13, 15
45. 9, 21, 33, [45], 57
46. 2, 12, [22], 32, 42
47. 3, 6, [9], 12, 15
48. 7, 16, [25], 34, 43
49. 5, 9, 13, [17], 21
50. 6, [18], 30, 42, 54

Dividing by 7

51. $35 \div 7 = 5$
52. $63 \div 7 = 9$
53. $42 \div 7 = 6$
54. $70 \div 7 = 10$
55. $49 \div 7 = 7$
56. $56 \div 7 = 8$
57. $7 \div 7 = 1$
58. $14 \div 7 = 2$
59. $28 \div 7 = 4$
60. $21 \div 7 = 3$

True, False or Fix It

Reasoning puzzles

1. $\bullet = 15$, $\blacklozenge = 20$
2. An odd number times an even number is odd. $\rightarrow$ never

True, False or Fix It (continued)

Reasoning puzzles (continued)

3. A number that ends in 5 is even. $\rightarrow$ never
4. $12 \times 12 = 144$, not 24 (the numbers were added instead of multiplied)
5. 42, 10, 12, 54 $\rightarrow$ 10 (the other three are all multiples of 3)
6. $\blacksquare = 9$, $\blacktriangle = 12$
7. $9 \times 3 = 27$, not 12 (the numbers were added instead of multiplied)

Telling the Time

Elapsed time

1. 12:10 $\rightarrow$ 1:05 = 55 min
2. 8:40 $\rightarrow$ 9:55 = 75 min
3. 1:50 $\rightarrow$ 2:45 = 55 min
4. 2:45 $\rightarrow$ 3:55 = 70 min
5. 2:10 $\rightarrow$ 3:10 = 60 min
6. 7:20 $\rightarrow$ 8:40 = 80 min
7. 5:30 $\rightarrow$ 6:35 = 65 min
8. 8:00 $\rightarrow$ 9:05 = 65 min
9. 6:50 $\rightarrow$ 8:10 = 80 min
10. 1:35 $\rightarrow$ 2:50 = 75 min
11. 1:55 $\rightarrow$ 2:55 = 60 min
12. 10:15 $\rightarrow$ 11:25 = 70 min
13. 7:30 $\rightarrow$ 8:45 = 75 min
14. 2:30 $\rightarrow$ 3:20 = 50 min
15. 12:25 $\rightarrow$ 1:35 = 70 min
16. 11:10 $\rightarrow$ 12:30 = 80 min
17. 1:20 $\rightarrow$ 2:15 = 55 min
18. 2:10 $\rightarrow$ 3:15 = 65 min
19. 10:10 $\rightarrow$ 11:20 = 70 min
20. 2:25 $\rightarrow$ 3:25 = 60 min
21. 12:10 $\rightarrow$ 1:35 = 85 min
22. 9:10 $\rightarrow$ 10:40 = 90 min
23. 8:20 $\rightarrow$ 9:50 = 90 min
24. 7:00 $\rightarrow$ 8:20 = 80 min
25. 6:45 $\rightarrow$ 8:15 = 90 min
26. 4:35 $\rightarrow$ 5:50 = 75 min

Comparing fractions

27. $4/7 > 1/6$
28. $6/7 > 4/6$
29. $4/6 < 4/5$
30. $2/5 > 1/5$
31. $4/6 < 3/4$

Answer Key (7 of 8)

Telling the Time (continued)

Comparing fractions (continued)

32. $\frac{4}{8} > \frac{1}{6}$
33. $\frac{5}{6} > \frac{2}{5}$
34. $\frac{4}{5} > \frac{5}{7}$
35. $\frac{2}{7} < \frac{4}{7}$
36. $\frac{3}{6} < \frac{4}{6}$

Naming Shapes

Name the shape

1. octagon — from octagon, pentagon, triangle
2. hexagon — from hexagon, rectangle, square
3. octagon — from octagon, pentagon, square
4. octagon — from octagon, rectangle, triangle
5. octagon — from hexagon, octagon, pentagon
6. square — from hexagon, rectangle, square
7. octagon — from octagon, pentagon, rectangle
8. octagon — from hexagon, octagon, rectangle

Number patterns

9. 2, 9, [16], 23, 30
10. 9, [14], 19, 24, 29
11. 6, 16, [26], 36, 46
12. 2, 9, 16, [23], 30
13. 8, 10, [12], 14, 16
14. 5, 16, [27], 38, 49
15. 8, 16, 24, [32], 40
16. 7, [12], 17, 22, 27

Area by Counting Squares

Area by counting squares

1. 4×8 less 2×3 : 26 squares
2. 7×6 less 1×1 : 41 squares
3. 6×6 less 5×1 : 31 squares
4. 7×8 less 6×3 : 38 squares
5. 8×8 less 5×7 : 29 squares
6. 7×8 less 3×5 : 41 squares
7. 7×8 less 5×3 : 41 squares
8. 7×6 less 3×5 : 27 squares
9. 8×8 less 3×2 : 58 squares
10. 6×8 less 3×2 : 42 squares

Rounding numbers

11. $689 \approx 690$
12. $493 \approx 490$
13. $901 \approx 900$
14. $141 \approx 140$

Area by Counting Squares (continued)

Rounding numbers (continued)

15. $824 \approx 820$
16. $268 \approx 270$
17. $891 \approx 890$
18. $66 \approx 70$
19. $768 \approx 770$
20. $72 \approx 70$

Perimeter

Perimeter

1. trapezoid $5 + 13 + 9 + 13$: 40 cm
2. trapezoid $14 + 15 + 15 + 15$: 59 cm
3. trapezoid $3 + 15 + 11 + 15$: 44 cm
4. trapezoid $3 + 16 + 20 + 16$: 55 cm
5. trapezoid $8 + 16 + 9 + 16$: 49 cm
6. trapezoid $14 + 12 + 17 + 12$: 55 cm
7. trapezoid $7 + 18 + 8 + 18$: 51 cm
8. trapezoid $6 + 11 + 8 + 11$: 36 cm
9. trapezoid $16 + 10 + 19 + 10$: 55 cm
10. trapezoid $15 + 16 + 20 + 16$: 67 cm
11. trapezoid $3 + 14 + 14 + 14$: 45 cm
12. trapezoid $4 + 15 + 19 + 15$: 53 cm

Elapsed time

13. $1:40 \rightarrow 2:20 = 40$ min
14. $2:45 \rightarrow 4:00 = 75$ min
15. $10:30 \rightarrow 11:20 = 50$ min
16. $2:45 \rightarrow 4:10 = 85$ min
17. $5:40 \rightarrow 6:25 = 45$ min
18. $2:35 \rightarrow 3:40 = 65$ min
19. $6:00 \rightarrow 7:30 = 90$ min
20. $2:25 \rightarrow 3:15 = 50$ min
21. $6:55 \rightarrow 8:20 = 85$ min
22. $3:45 \rightarrow 5:15 = 90$ min

Bar Graphs and Line Plots

Bar graphs

1. $6 + 8 = 14$, $14 - 2 = 12$
2. $2 + 6 = 8$, $8 - 7 = 1$
3. $2 + 8 = 10$, $10 - 6 = 4$

Line plots

4. longer than 3 inches — 13 worms
5. longer than 4 inches — 11 worms
6. longer than 5 inches — 7 worms

Answer Key (8 of 8)

Picture Graphs

Picture graphs

1. Bea is $9 - 1 = 8$ fewer than Ali
2. Ali is $9 - 5 = 4$ more than Caz
3. Dev is $9 - 7 = 2$ fewer than Ali
4. $9 + 10 = 19$, $19 - 8 = 11$
5. $8 + 10 = 18$, $18 - 9 = 9$
6. $8 + 9 = 17$, $17 - 10 = 7$

Dividing by 7

7. $49 \div 7 = 7$
8. $70 \div 7 = 10$
9. $42 \div 7 = 6$
10. $63 \div 7 = 9$
11. $35 \div 7 = 5$
12. $56 \div 7 = 8$

Review: Times Tables and Division

Multiplication

1. $9 \times 3 = 27$
2. $10 \times 8 = 80$
3. $3 \times 7 = 21$
4. $10 \times 7 = 70$
5. $6 \times 5 = 30$
6. $9 \times 9 = 81$
7. $10 \times 9 = 90$
8. $8 \times 2 = 16$
9. $6 \times 10 = 60$
10. $10 \times 10 = 100$
11. $4 \times 4 = 16$
12. $7 \times 6 = 42$

Division

13. $16 \div 8 = 2$
14. $56 \div 7 = 8$
15. $32 \div 4 = 8$
16. $60 \div 10 = 6$
17. $30 \div 6 = 5$
18. $100 \div 10 = 10$
19. $80 \div 10 = 8$
20. $24 \div 4 = 6$
21. $40 \div 10 = 4$
22. $50 \div 10 = 5$
23. $21 \div 7 = 3$
24. $40 \div 5 = 8$

Review: Times Tables and Division (continued)

Word problems: mixed

25. $39 - 26 = 13$ books
26. $58 - 23 = 35$ tickets
27. $15 \div 3 = 5$ boxes
28. $60 - 28 = 32$ carrots

Solutions (1 of 13)

Rounding to 10 and 100

Rounding numbers

1. **337** $\approx$ _____

3 3 7
337 $\rightarrow$ **340**

Find the tens digit first — that is the one that might change.

Now look at the single digit just after it: 7. Nothing further along matters at all.

7 is 5 or more, so 337 is nearer 340 than 330. It rounds up.

So 337 to the nearest ten is 340.

2. **749** $\approx$ _____

7 4 9
749 $\rightarrow$ **750**

Find the tens digit first — that is the one that might change.

Now look at the single digit just after it: 9. Nothing further along matters at all.

9 is 5 or more, so 749 is nearer 750 than 740. It rounds up.

So 749 to the nearest ten is 750.

Solutions (2 of 13)

Equal Groups: the 2 Times Table

Word problems: multiplying

19. Ravi filled 4 hutches with 4 carrots in each. Besides those, Ravi has 2 treats.

How many carrots does Ravi have in all? ____

asked:

How many carrots does Ravi have in all?

$$4 \times 4 = 16$$

16 carrots

Read it through once and do NOTHING. Grabbing the numbers on the first read means choosing an operation before you know the story, and that choice is the only hard part of a word problem.

Now the numbers: 4 and 4. Finding them is not the same as knowing what to do with them — that comes next, and it comes from the story rather than from the numbers.

Equal groups, and you are told how many groups and how big each one is — that is a multiplication, and adding the two numbers is the mistake the story is set up to catch. So this one is a multiplication: 4×4 .

$4 \times 4 = 16$ carrots. And answer the question that was ASKED — "How many carrots does Ravi have in all?" — in carrots, because the sum on its own is not yet an answer.

Equal Parts

Name the fraction

1. = ____

pieces in all: 5

shaded: 4

$\frac{4}{5}$

Count the BOTTOM number first, and count every piece — shaded and unshaded together. It is how many the whole was cut into: 5.

Only now count the shaded ones: 4. The number NOT shaded (1) is also sitting there in the picture, and writing that underneath is the usual mistake.

Shaded over total: $\frac{4}{5}$.

Solutions (3 of 13)

Equal Parts (continued)

Name the fraction (continued)

2. = —

pieces in all: 5

shaded: 3

$$\frac{3}{5}$$

Count the BOTTOM number first, and count every piece — shaded and unshaded together. It is how many the whole was cut into: 5.

Only now count the shaded ones: 3. The number NOT shaded (2) is also sitting there in the picture, and writing that underneath is the usual mistake.

Shaded over total: $\frac{3}{5}$.

Comparing Fractions

Comparing fractions

1. $\frac{1}{8} \bigcirc \frac{3}{4}$

$$\frac{1}{8} \quad ? \quad \frac{3}{4}$$

$$\frac{3}{4} = \frac{6}{8}$$

$$\frac{1}{8} < \frac{6}{8}$$

$$\frac{1}{8} < \frac{3}{4}$$

Eighths and quarters are different SIZES of piece, so the two top numbers cannot be compared as they stand. A bigger number on the bottom means a smaller piece — which is the part of this that feels backwards.

Eighths will hold both, and only one of them has to move: $\frac{3}{4}$ is $\frac{6}{8}$. It has not changed in size — it is just being counted in smaller pieces.

Same size of piece, so now it is only counting: 1 against 6. $\frac{1}{8}$ is less than $\frac{3}{4}$: $\frac{1}{8} < \frac{3}{4}$.

Solutions (4 of 13)

Comparing Fractions (continued)

Comparing fractions (continued)

2. $\frac{4}{6} \bigcirc \frac{4}{5}$

$$\begin{array}{rcl} \frac{4}{6} & ? & \frac{4}{5} \\ \frac{4}{6} & = & \frac{20}{30} \\ \frac{4}{5} & = & \frac{24}{30} \\ \frac{20}{30} & < & \frac{24}{30} \\ \frac{4}{6} & < & \frac{4}{5} \end{array}$$

Sixths and fifths are different SIZES of piece, so the two top numbers cannot be compared as they stand. A bigger number on the bottom means a smaller piece — which is the part of this that feels backwards.

Cut both into 30ths: $\frac{4}{6}$ is $\frac{20}{30}$, and $\frac{4}{5}$ is $\frac{24}{30}$. Neither has changed in size — they are just being measured in the same piece now.

Same size of piece, so now it is only counting: 20 against 24. $\frac{4}{6}$ is less than $\frac{4}{5}$: $\frac{4}{6} < \frac{4}{5}$.

Number Patterns

Number patterns

1. 1, 9, 17, ____, 33

1 9 17 25 33

Find the rule first, from two numbers you can actually see — never from the gap.

1 to 9 is + 8. One pair is a guess, though — check it against another.

$9 + 8 = 17$, so the rule holds. Two pairs agreeing is what turns a guess into the rule.

Now apply it to the gap: $17 + 8 = 25$.

Check it against the number already after the gap: $25 + 8 = 33$, which is what is there. The missing number is 25.

Solutions (5 of 13)

Number Patterns (continued)

Number patterns (continued)

2. 6, 16, ____, 36, 46

6 16 26 36 46

Find the rule first, from two numbers you can actually see — never from the gap.

6 to 16 is + 10. One pair is a guess, though — check it against another.

$36 + 10 = 46$, so the rule holds. Two pairs agreeing is what turns a guess into the rule.

Now apply it to the gap: $16 + 10 = 26$.

Check it against the number already after the gap: $26 + 10 = 36$, which is what is there. The missing number is 26.

True, False or Fix It

Reasoning puzzles

1. ● + ● + ● = 45 and ● + ♦ = 35. What is ♦? ____

Why?

$$45 \div 3 = 15$$

$$35 - 15 = 20$$

Two unknown symbols and two facts. Do not start where the question points — start where there is only ONE thing you do not know, because that is the only place an answer can come from.

The first fact is the same symbol 3 times and nothing else, so it is that symbol multiplied by 3: $45 \div 3 = 15$.

Now the next fact has only one unknown left in it — it is 35 take away the 15: $35 - 15 = 20$.

Solutions (6 of 13)

True, False or Fix It (continued)

Reasoning puzzles (continued)

2. An odd number times an even number is odd.

always

sometimes

never

Why?

always

sometimes

never

never

Before trying anything, notice what each answer would COST. One example that works proves nothing at all. One that fails rules out "always" on its own. They are not the same size of evidence.

So hunt for a counter-example — a case where the claim breaks. That is the cheapest question to ask, and its answer decides between all three.

Try 13 and 28 — it fails, and so does every other case. So the answer is never.

Telling the Time

Elapsed time

1. 12:10 → 1:05 = ____ min

12:10



From 12:10 to 1:05. Count FORWARDS rather than taking one from the other — then nothing has to be borrowed and the hour never bites.

First hop: up to the next o'clock. 12:10 to 1:00 is 50 minutes.

Then the last 5 minutes to reach 1:05.

Add the hops up: 50 + 5 — that is 55 minutes.

2. 8:40 → 9:55 = ____ min

8:40



From 8:40 to 9:55. Count FORWARDS rather than taking one from the other — then nothing has to be borrowed and the hour never bites.

First hop: up to the next o'clock. 8:40 to 9:00 is 20 minutes.

Then the last 55 minutes to reach 9:55.

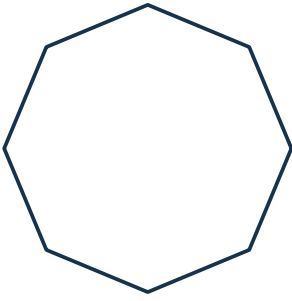
Add the hops up: 20 + 55 — that is 1 hour and 15 minutes, or 75 minutes in all.

Solutions (7 of 13)

Naming Shapes

Name the shape

1.



octagon

pentagon

triangle

sides: 8

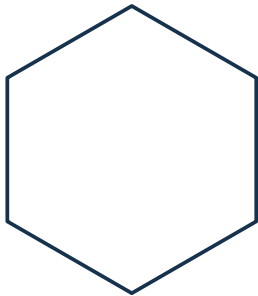
octagon

Count the sides first — that is what almost every shape name is built from, and it is one number rather than a picture to recognize.

8 sides makes it an octagon.

So it is an octagon.

2.



hexagon

rectangle

square

sides: 6

hexagon

Count the sides first — that is what almost every shape name is built from, and it is one number rather than a picture to recognize.

6 sides makes it a hexagon.

So it is a hexagon.

Solutions (8 of 13)

Area by Counting Squares

Area by counting squares

1.



— squares

$$\text{first way: } 32 - 6 = 26$$

$$\text{strip: } 4 \times 5 = 20$$

$$\text{upright: } 2 \times 3 = 6$$

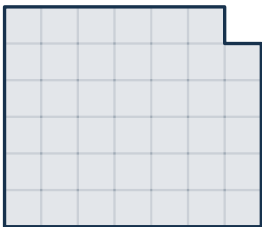
$$20 + 6 = \mathbf{26 \text{ squares}}$$

There is no single row that runs all the way across this one, so counting rows does not work as it stands. Cut it into pieces that ARE rectangles — and there is more than one way.

First way: count the whole rectangle it would be — $4 \times 8 = 32$ — then take off the bite, $2 \times 3 = 6$. That leaves 26.

Second way: two rectangles. The strip underneath is $4 \times 5 = 20$, the part standing on it is $2 \times 3 = 6$, and $20 + 6 = 26$. Two ways agreeing is how you know a count is right.

2.



— squares

$$\text{first way: } 42 - 1 = 41$$

$$\text{strip: } 7 \times 5 = 35$$

$$\text{upright: } 6 \times 1 = 6$$

$$35 + 6 = \mathbf{41 \text{ squares}}$$

There is no single row that runs all the way across this one, so counting rows does not work as it stands. Cut it into pieces that ARE rectangles — and there is more than one way.

First way: count the whole rectangle it would be — $7 \times 6 = 42$ — then take off the bite, $1 \times 1 = 1$. That leaves 41.

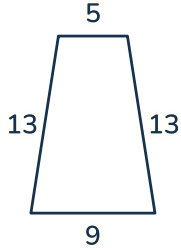
Second way: two rectangles. The strip underneath is $7 \times 5 = 35$, the part standing on it is $6 \times 1 = 6$, and $35 + 6 = 41$. Two ways agreeing is how you know a count is right.

Solutions (9 of 13)

Perimeter

Perimeter

1.



— cm

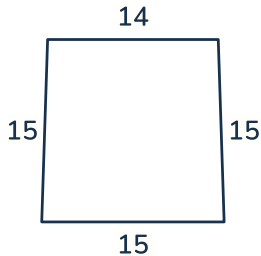
$$\begin{array}{l} \text{sides: } 5 \quad 13 \quad 9 \quad 13 \\ 5 + 13 + 9 + 13 = \\ \mathbf{40 \text{ cm}} \end{array}$$

Perimeter is the distance round the OUTSIDE — the length of the fence, not the size of the field. That is the whole difference between this and area, and it is where the usual wrong answer comes from.

So there is nothing to work out — just walk round the edge and add: $5 + 13 + 9 + 13$.

$5 + 13 + 9 + 13 = 40$ cm. Note the unit: cm, not square cm — a fence is a length, and a length never gets squared.

2.



— cm

$$\begin{array}{l} \text{sides: } 14 \quad 15 \quad 15 \quad 15 \\ 14 + 15 + 15 + 15 = \\ \mathbf{59 \text{ cm}} \end{array}$$

Perimeter is the distance round the OUTSIDE — the length of the fence, not the size of the field. That is the whole difference between this and area, and it is where the usual wrong answer comes from.

So there is nothing to work out — just walk round the edge and add: $14 + 15 + 15 + 15$.

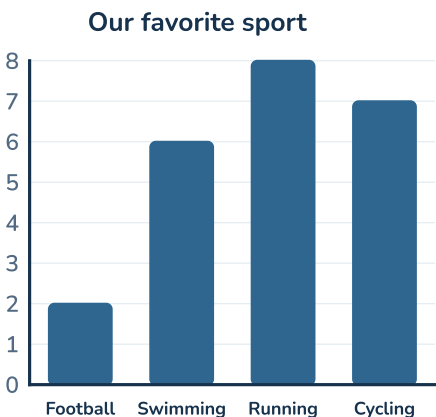
$14 + 15 + 15 + 15 = 59$ cm. Note the unit: cm, not square cm — a fence is a length, and a length never gets squared.

Solutions (10 of 13)

Bar Graphs and Line Plots

Bar graphs

1.



How many more chose swimming and running than chose football?

—

Football: 2 up → 2 votes
Swimming: 6 up → 6 votes
Running: 8 up → 8 votes
Cycling: 7 up → 7 votes

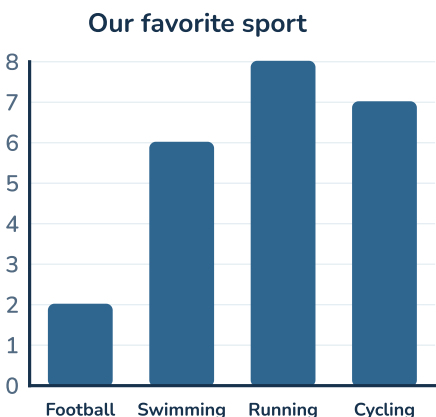
12 votes

Check the key first, every time. Here one square is one vote, so counting is enough — but that is a fact to check, not to assume.

So the counts read straight off: Football 2, Swimming 6, Running 8, Cycling 7.

Now the question, on the NUMBERS rather than the marks: $6 + 8 = 14$, $14 - 2 = 12$. So the answer is 12 votes.

2.



How many more chose football and swimming than chose cycling?

—

Football: 2 up → 2 votes
Swimming: 6 up → 6 votes
Running: 8 up → 8 votes
Cycling: 7 up → 7 votes

1 votes

Check the key first, every time. Here one square is one vote, so counting is enough — but that is a fact to check, not to assume.

So the counts read straight off: Football 2, Swimming 6, Running 8, Cycling 7.

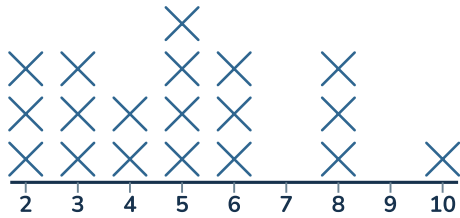
Now the question, on the NUMBERS rather than the marks: $2 + 6 = 8$, $8 - 7 = 1$. So the answer is 1 votes.

Solutions (11 of 13)

Bar Graphs and Line Plots (continued)

Line plots

4. Length of worms we found (inches)



How many worms were longer than 3 inches?

—

2 inches:	3 worms
3 inches:	3 worms
4 inches:	2 worms
5 inches:	4 worms
6 inches:	3 worms
8 inches:	3 worms
10 inches:	1 worms

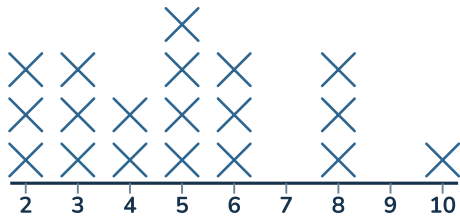
13

A line plot is not bars to read off a scale — each mark is one worm. So the number **ALONG** the bottom and the number of marks **ABOVE** it are two different quantities, and the question wants one of them.

Counting the stacks: 3 at 2, 3 at 3, 2 at 4, 4 at 5, 3 at 6, 3 at 8, 1 at 10.

longer than 3 inches — 13 worms — so the answer is 13.

5. Length of worms we found (inches)



How many worms were longer than 4 inches?

—

2 inches:	3 worms
3 inches:	3 worms
4 inches:	2 worms
5 inches:	4 worms
6 inches:	3 worms
8 inches:	3 worms
10 inches:	1 worms

11

A line plot is not bars to read off a scale — each mark is one worm. So the number **ALONG** the bottom and the number of marks **ABOVE** it are two different quantities, and the question wants one of them.

Counting the stacks: 3 at 2, 3 at 3, 2 at 4, 4 at 5, 3 at 6, 3 at 8, 1 at 10.

longer than 4 inches — 11 worms — so the answer is 11.

Solutions (12 of 13)

Picture Graphs

Picture graphs



Each ● stands for 1.

How many fewer for Bea than for Ali?

—

Ali: 9 drawn → 9 books

Bea: 1 drawn → 1 books

Caz: 5 drawn → 5 books

Dev: 7 drawn → 7 books

8 books

Check the key first, every time. Here one picture is one book, so counting is enough — but that is a fact to check, not to assume.

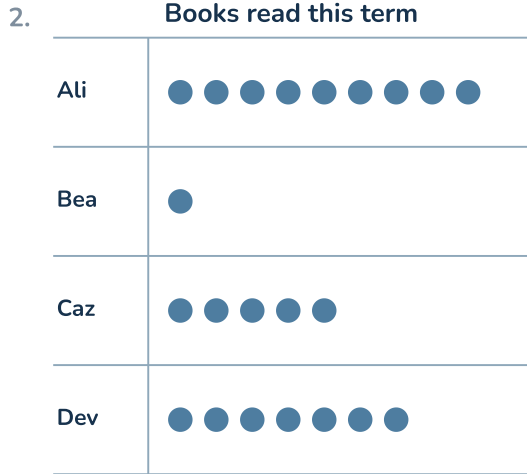
So the counts read straight off: Ali 9, Bea 1, Caz 5, Dev 7.

Now the question, on the NUMBERS rather than the marks: Bea is $9 - 1 = 8$ fewer than Ali. So the answer is 8 books.

Solutions (13 of 13)

Picture Graphs (continued)

Picture graphs (continued)



Each ● stands for 1.

How many more for Ali than for Caz?

—

Ali: 9 drawn → 9 books

Bea: 1 drawn → 1 books

Caz: 5 drawn → 5 books

Dev: 7 drawn → 7 books

4 books

Check the key first, every time. Here one picture is one book, so counting is enough — but that is a fact to check, not to assume.

So the counts read straight off: Ali 9, Bea 1, Caz 5, Dev 7.

Now the question, on the NUMBERS rather than the marks: Ali is $9 - 5 = 4$ more than Caz. So the answer is 4 books.