

Grade 4 Math Workbook

20 lessons · printable · answer key at the back

Name _____

Date _____

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Place Value in Four-Digit Numbers

WORKED EXAMPLE

$$35\underline{4}6 \rightarrow \underline{40}$$

1. The value of a digit

Write what the underlined digit is worth.

- | | | | | | | | |
|----|-----------------------|----|-----------------------|----|-----------------------|----|-----------------------|
| 1 | 772 <u>3</u> → _____ | 2 | 462 <u>7</u> → _____ | 3 | 7 <u>2</u> 64 → _____ | 4 | 28 <u>3</u> 5 → _____ |
| 5 | 713 <u>1</u> → _____ | 6 | <u>7</u> 476 → _____ | 7 | 39 <u>8</u> 3 → _____ | 8 | 58 <u>9</u> 3 → _____ |
| 9 | 80 <u>6</u> 5 → _____ | 10 | 39 <u>4</u> 5 → _____ | 11 | 2 <u>2</u> 58 → _____ | 12 | 97 <u>9</u> 7 → _____ |
| 13 | 53 <u>4</u> 1 → _____ | 14 | 4 <u>5</u> 85 → _____ | | | | |

2. Writing expanded form

Write each number in expanded form.

- | | | | |
|----|--------------|----|--------------|
| 15 | 1691 = _____ | 16 | 5767 = _____ |
| 17 | 6267 = _____ | 18 | 8807 = _____ |
| 19 | 1581 = _____ | 20 | 8888 = _____ |
| 21 | 7968 = _____ | 22 | 8573 = _____ |
| 23 | 3509 = _____ | 24 | 6372 = _____ |
| 25 | 7229 = _____ | 26 | 6759 = _____ |

Rounding to the Nearest Ten

WORKED EXAMPLE

$$819 \approx \underline{820}$$

3. Rounding numbers

Round each number to the nearest 10.

- | | | | |
|------------------------|------------------------|------------------------|------------------------|
| 1 713 $\approx$ _____ | 2 172 $\approx$ _____ | 3 72 $\approx$ _____ | 4 17 $\approx$ _____ |
| 5 947 $\approx$ _____ | 6 751 $\approx$ _____ | 7 74 $\approx$ _____ | 8 21 $\approx$ _____ |
| 9 305 $\approx$ _____ | 10 539 $\approx$ _____ | 11 531 $\approx$ _____ | 12 327 $\approx$ _____ |
| 13 303 $\approx$ _____ | 14 311 $\approx$ _____ | 15 82 $\approx$ _____ | 16 589 $\approx$ _____ |
| 17 639 $\approx$ _____ | 18 499 $\approx$ _____ | 19 716 $\approx$ _____ | 20 675 $\approx$ _____ |
| 21 491 $\approx$ _____ | 22 542 $\approx$ _____ | 23 147 $\approx$ _____ | 24 963 $\approx$ _____ |
| 25 126 $\approx$ _____ | 26 957 $\approx$ _____ | 27 304 $\approx$ _____ | |

4. Estimating a sum

Round each number to the nearest ten, then add.

- | | | |
|------------------------------|------------------------------|------------------------------|
| 28 126 + 191 $\approx$ _____ | 29 161 + 235 $\approx$ _____ | 30 126 + 422 $\approx$ _____ |
| 31 133 + 532 $\approx$ _____ | 32 112 + 862 $\approx$ _____ | 33 105 + 147 $\approx$ _____ |
| 34 133 + 323 $\approx$ _____ | 35 119 + 697 $\approx$ _____ | |

5. Estimating a difference

Round each number to the nearest ten, then subtract.

- | | | |
|------------------------------|------------------------------|------------------------------|
| 36 196 - 191 $\approx$ _____ | 37 245 - 213 $\approx$ _____ | 38 301 - 125 $\approx$ _____ |
| 39 182 - 136 $\approx$ _____ | 40 413 - 213 $\approx$ _____ | 41 406 - 301 $\approx$ _____ |
| 42 133 - 114 $\approx$ _____ | 43 399 - 235 $\approx$ _____ | |

6. Estimating a product

Round each number to the nearest ten, then multiply.

- | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|
| 44 41 $\times$ 25 $\approx$ _____ | 45 62 $\times$ 11 $\approx$ _____ | 46 83 $\times$ 46 $\approx$ _____ |
| 47 44 $\times$ 53 $\approx$ _____ | 48 62 $\times$ 74 $\approx$ _____ | 49 47 $\times$ 81 $\approx$ _____ |
| 50 14 $\times$ 11 $\approx$ _____ | 51 38 $\times$ 67 $\approx$ _____ | |

Multiplying Two Digits by One

WORKED EXAMPLE

$$\begin{array}{r} 11 \\ \times 3 \\ \hline 33 \end{array}$$

7. Multiply multi-digit numbers

Multiply. Show your working.

$$\begin{array}{r} 1 \quad 34 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 71 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 77 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \quad 13 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \quad 11 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \quad 80 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \quad 85 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \quad 78 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \quad 15 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \quad 91 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 11 \quad 56 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \quad 49 \\ \times 2 \\ \hline \end{array}$$

Multiplying Three Digits by One

WORKED EXAMPLE

$$\begin{array}{r} 198 \\ \times 8 \\ \hline 1584 \end{array}$$

8. Multiply multi-digit numbers

Multiply. Show your working.

$$\begin{array}{r} 1 \quad 719 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 395 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 760 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \quad 104 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \quad 157 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \quad 219 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \quad 586 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \quad 497 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \quad 537 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \quad 903 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 11 \quad 573 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \quad 391 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 13 \quad 433 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 14 \quad 892 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 15 \quad 328 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \quad 113 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 17 \quad 807 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 18 \quad 274 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 19 \quad 730 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \quad 287 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 21 \quad 225 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 22 \quad 744 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 23 \quad 908 \\ \times 3 \\ \hline \end{array}$$

Multiplying Two Digits by Two

WORKED EXAMPLE

$$\begin{array}{r}
 47 \\
 \times 32 \\
 \hline
 94 \\
 1410 \\
 \hline
 1504
 \end{array}$$

9. Multiply multi-digit numbers

Multiply. Show your working.

$$\begin{array}{r}
 1 \quad 11 \\
 \times 99 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2 \quad 30 \\
 \times 61 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 3 \quad 56 \\
 \times 18 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 4 \quad 34 \\
 \times 43 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5 \quad 95 \\
 \times 99 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 6 \quad 29 \\
 \times 11 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 7 \quad 42 \\
 \times 61 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 8 \quad 18 \\
 \times 14 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 9 \quad 40 \\
 \times 38 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 10 \quad 67 \\
 \times 36 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 11 \quad 63 \\
 \times 21 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 12 \quad 60 \\
 \times 83 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 13 \quad 33 \\
 \times 40 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 14 \quad 35 \\
 \times 86 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 15 \quad 10 \\
 \times 19 \\
 \hline
 \end{array}$$

Division with Remainders

WORKED EXAMPLE

$$34 \div 4 = \underline{8} \text{ R } \underline{2}$$

10. Division with remainders

Divide. Write the quotient and the remainder.

- | | | |
|--|---|---|
| 1 $7 \div 3 = \underline{\quad} \text{ R } \underline{\quad}$ | 2 $50 \div 7 = \underline{\quad} \text{ R } \underline{\quad}$ | 3 $28 \div 5 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 4 $13 \div 2 = \underline{\quad} \text{ R } \underline{\quad}$ | 5 $67 \div 9 = \underline{\quad} \text{ R } \underline{\quad}$ | 6 $22 \div 9 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 7 $59 \div 5 = \underline{\quad} \text{ R } \underline{\quad}$ | 8 $27 \div 5 = \underline{\quad} \text{ R } \underline{\quad}$ | 9 $55 \div 6 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 10 $17 \div 2 = \underline{\quad} \text{ R } \underline{\quad}$ | 11 $79 \div 7 = \underline{\quad} \text{ R } \underline{\quad}$ | 12 $30 \div 8 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 13 $61 \div 8 = \underline{\quad} \text{ R } \underline{\quad}$ | 14 $33 \div 4 = \underline{\quad} \text{ R } \underline{\quad}$ | 15 $30 \div 4 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 16 $115 \div 9 = \underline{\quad} \text{ R } \underline{\quad}$ | 17 $45 \div 7 = \underline{\quad} \text{ R } \underline{\quad}$ | 18 $26 \div 3 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 19 $32 \div 3 = \underline{\quad} \text{ R } \underline{\quad}$ | | |

11. Word problems

Read each problem. Write the answer.

- 20 Marian packed 24 bread rolls into trays of 6.
How many trays did Marian fill?

- 21 Courtney shared 77 food pellets equally among 7 feed bags.
How many food pellets went in each feed bag?

- 22 Noah packed 20 tickets into shelves of 5.
How many shelves did Noah fill?

Long Division

WORKED EXAMPLE

$$\begin{array}{r} 31 \\ 4 \overline{)124} \\ \underline{12} \\ 4 \\ \underline{4} \\ 0 \end{array}$$

12. Long division

Divide. Show your working.

$$\begin{array}{llllll} 1 & 2 & 3 & 4 & 5 & 6 \\ 6 \overline{)330} & 3 \overline{)411} & 9 \overline{)279} & 4 \overline{)260} & 8 \overline{)768} & 7 \overline{)525} \end{array}$$

$$\begin{array}{lll} 7 & 8 & 9 \\ 5 \overline{)245} & 2 \overline{)224} & 5 \overline{)560} \end{array}$$

Long Division with Remainders

WORKED EXAMPLE

$$\begin{array}{r} 54 \\ 5 \overline{)274} \\ \underline{25} \\ 24 \\ \underline{20} \\ 4 \end{array}$$

13. Long division with remainders

Divide. Give the quotient and the remainder.

$$\begin{array}{l} 1 \quad \quad \quad \underline{\quad} \text{ R } \underline{\quad} \quad \quad \underline{\quad} \text{ R } \underline{\quad} \quad \quad \underline{\quad} \text{ R } \underline{\quad} \quad \quad \underline{\quad} \text{ R } \underline{\quad} \quad \quad \underline{\quad} \text{ R } \underline{\quad} \quad \quad \underline{\quad} \text{ R } \underline{\quad} \\ 3 \overline{)404} \quad 7 \overline{)627} \quad 8 \overline{)171} \quad 6 \overline{)389} \quad 7 \overline{)888} \quad 3 \overline{)545} \end{array}$$

$$\begin{array}{l} 7 \quad \quad \quad \underline{\quad} \text{ R } \underline{\quad} \quad \quad \underline{\quad} \text{ R } \underline{\quad} \quad \quad \underline{\quad} \text{ R } \underline{\quad} \quad \quad \underline{\quad} \text{ R } \underline{\quad} \\ 7 \overline{)398} \quad 8 \overline{)390} \quad 9 \overline{)438} \quad 5 \overline{)817} \end{array}$$

WORKED EXAMPLE

 $6 \rightarrow \underline{1, 2, 3, 6}$ **14. List the factors**

List all the factors of each number.

- 1 $19 \rightarrow$ _____
- 2 $39 \rightarrow$ _____
- 3 $2 \rightarrow$ _____
- 4 $12 \rightarrow$ _____
- 5 $23 \rightarrow$ _____
- 6 $33 \rightarrow$ _____
- 7 $25 \rightarrow$ _____
- 8 $24 \rightarrow$ _____
- 9 $5 \rightarrow$ _____
- 10 $26 \rightarrow$ _____
- 11 $9 \rightarrow$ _____
- 12 $8 \rightarrow$ _____
- 13 $20 \rightarrow$ _____
- 14 $37 \rightarrow$ _____
- 15 $34 \rightarrow$ _____
- 16 $3 \rightarrow$ _____
- 17 $40 \rightarrow$ _____
- 18 $7 \rightarrow$ _____
- 19 $22 \rightarrow$ _____
- 20 $28 \rightarrow$ _____
- 21 $31 \rightarrow$ _____

WORKED EXAMPLE

5 → 5, 10, 15, 20, 25**15. Multiples**

List the first five multiples of each number.

- 1 13 → _____
- 2 19 → _____
- 3 7 → _____
- 4 30 → _____
- 5 4 → _____
- 6 25 → _____
- 7 8 → _____
- 8 39 → _____
- 9 27 → _____
- 10 2 → _____
- 11 36 → _____

16. Circling multiples

Circle every multiple of the number in the box.

- | | | | | | | | |
|----|----|----|----|----|----|----|----|
| 12 | 2 | 5 | 29 | 36 | 15 | 32 | 23 |
| 13 | 6 | 22 | 5 | 30 | 27 | 24 | 18 |
| 14 | 5 | 13 | 10 | 15 | 37 | 12 | 39 |
| 15 | 11 | 33 | 27 | 14 | 28 | 10 | 11 |
| 16 | 2 | 15 | 13 | 30 | 9 | 6 | 8 |
| 17 | 7 | 28 | 7 | 11 | 16 | 34 | 35 |

Adding and Subtracting Fractions

WORKED EXAMPLE

$$\frac{1}{7} + \frac{5}{7} = \frac{6}{7}$$

17. Add and subtract fractions

Add or subtract. Write each answer in simplest form.

1 $\frac{6}{7} + \frac{2}{7} = \text{—}$

2 $\frac{4}{7} + \frac{4}{7} = \text{—}$

3 $\frac{2}{7} - \frac{1}{7} = \text{—}$

4 $\frac{1}{7} + \frac{4}{7} = \text{—}$

5 $\frac{3}{5} - \frac{2}{5} = \text{—}$

6 $\frac{1}{7} + \frac{6}{7} = \text{—}$

7 $\frac{6}{8} + \frac{7}{8} = \text{—}$

8 $\frac{3}{4} - \frac{1}{4} = \text{—}$

9 $\frac{3}{8} + \frac{4}{8} = \text{—}$

10 $\frac{6}{8} - \frac{5}{8} = \text{—}$

11 $\frac{3}{6} + \frac{3}{6} = \text{—}$

12 $\frac{6}{8} - \frac{3}{8} = \text{—}$

13 $\frac{4}{8} + \frac{6}{8} = \text{—}$

14 $\frac{4}{7} - \frac{2}{7} = \text{—}$

15 $\frac{1}{4} + \frac{2}{4} = \text{—}$

16 $\frac{4}{6} - \frac{3}{6} = \text{—}$

17 $\frac{6}{8} + \frac{3}{8} = \text{—}$

18 $\frac{7}{8} - \frac{5}{8} = \text{—}$

19 $\frac{7}{8} + \frac{3}{8} = \text{—}$

20 $\frac{5}{8} - \frac{4}{8} = \text{—}$

21 $\frac{6}{7} + \frac{3}{7} = \text{—}$

22 $\frac{3}{8} - \frac{2}{8} = \text{—}$

23 $\frac{6}{7} + \frac{4}{7} = \text{—}$

24 $\frac{2}{5} - \frac{1}{5} = \text{—}$

25 $\frac{3}{7} + \frac{1}{7} = \text{—}$

26 $\frac{5}{8} - \frac{3}{8} = \text{—}$

27 $\frac{3}{8} + \frac{7}{8} = \text{—}$

28 $\frac{6}{8} - \frac{2}{8} = \text{—}$

29 $\frac{3}{6} + \frac{4}{6} = \text{—}$

30 $\frac{2}{4} - \frac{1}{4} = \text{—}$

31 $\frac{3}{7} + \frac{4}{7} = \text{—}$

32 $\frac{6}{7} - \frac{4}{7} = \text{—}$

33 $\frac{4}{5} + \frac{3}{5} = \text{—}$

34 $\frac{3}{6} - \frac{2}{6} = \text{—}$

35 $\frac{1}{3} + \frac{1}{3} = \text{—}$

36 $\frac{6}{7} - \frac{5}{7} = \text{—}$

37 $\frac{3}{6} + \frac{5}{6} = \text{—}$

38 $\frac{5}{7} - \frac{3}{7} = \text{—}$

39 $\frac{5}{7} + \frac{3}{7} = \text{—}$

40 $\frac{3}{8} - \frac{1}{8} = \text{—}$

41 $\frac{2}{8} + \frac{5}{8} = \text{—}$

42 $\frac{4}{8} - \frac{2}{8} = \text{—}$

Mixed Numbers

WORKED EXAMPLE

$$4\frac{2}{5} + 3\frac{2}{5} = 7\frac{4}{5}$$

18. Adding mixed numbers

Add. Write each answer as a mixed number in simplest form.

1 $5\frac{1}{7} + 4\frac{4}{7} = \underline{\hspace{1cm}}$

4 $3\frac{6}{7} + 5\frac{6}{7} = \underline{\hspace{1cm}}$

7 $5\frac{2}{5} + 3\frac{4}{5} = \underline{\hspace{1cm}}$

10 $4\frac{3}{7} + 3\frac{3}{7} = \underline{\hspace{1cm}}$

13 $5\frac{4}{5} + 1\frac{2}{5} = \underline{\hspace{1cm}}$

16 $1\frac{5}{8} + 1\frac{1}{8} = \underline{\hspace{1cm}}$

19 $1\frac{5}{8} + 2\frac{5}{8} = \underline{\hspace{1cm}}$

22 $2\frac{3}{8} + 3\frac{1}{8} = \underline{\hspace{1cm}}$

25 $2\frac{3}{5} + 3\frac{3}{5} = \underline{\hspace{1cm}}$

28 $2\frac{1}{8} + 2\frac{3}{8} = \underline{\hspace{1cm}}$

31 $2\frac{5}{8} + 3\frac{3}{8} = \underline{\hspace{1cm}}$

34 $1\frac{3}{8} + 5\frac{1}{8} = \underline{\hspace{1cm}}$

37 $2\frac{1}{5} + 2\frac{3}{5} = \underline{\hspace{1cm}}$

40 $1\frac{4}{5} + 1\frac{2}{5} = \underline{\hspace{1cm}}$

2 $4\frac{4}{7} + 4\frac{4}{7} = \underline{\hspace{1cm}}$

5 $2\frac{1}{5} + 4\frac{3}{5} = \underline{\hspace{1cm}}$

8 $2\frac{3}{7} + 2\frac{1}{7} = \underline{\hspace{1cm}}$

11 $1\frac{5}{8} + 5\frac{5}{8} = \underline{\hspace{1cm}}$

14 $1\frac{2}{7} + 1\frac{3}{7} = \underline{\hspace{1cm}}$

17 $2\frac{4}{5} + 4\frac{1}{5} = \underline{\hspace{1cm}}$

20 $2\frac{1}{7} + 3\frac{3}{7} = \underline{\hspace{1cm}}$

23 $4\frac{6}{7} + 3\frac{1}{7} = \underline{\hspace{1cm}}$

26 $5\frac{1}{7} + 2\frac{4}{7} = \underline{\hspace{1cm}}$

29 $1\frac{1}{7} + 4\frac{6}{7} = \underline{\hspace{1cm}}$

32 $3\frac{1}{7} + 4\frac{4}{7} = \underline{\hspace{1cm}}$

35 $3\frac{5}{8} + 5\frac{7}{8} = \underline{\hspace{1cm}}$

38 $2\frac{5}{8} + 1\frac{7}{8} = \underline{\hspace{1cm}}$

41 $4\frac{1}{6} + 3\frac{1}{6} = \underline{\hspace{1cm}}$

3 $5\frac{1}{8} + 3\frac{5}{8} = \underline{\hspace{1cm}}$

6 $2\frac{3}{7} + 4\frac{2}{7} = \underline{\hspace{1cm}}$

9 $1\frac{4}{5} + 2\frac{1}{5} = \underline{\hspace{1cm}}$

12 $4\frac{3}{7} + 5\frac{1}{7} = \underline{\hspace{1cm}}$

15 $2\frac{2}{5} + 5\frac{3}{5} = \underline{\hspace{1cm}}$

18 $2\frac{4}{7} + 3\frac{1}{7} = \underline{\hspace{1cm}}$

21 $3\frac{1}{8} + 3\frac{7}{8} = \underline{\hspace{1cm}}$

24 $2\frac{2}{7} + 5\frac{4}{7} = \underline{\hspace{1cm}}$

27 $3\frac{4}{7} + 2\frac{4}{7} = \underline{\hspace{1cm}}$

30 $4\frac{3}{5} + 4\frac{1}{5} = \underline{\hspace{1cm}}$

33 $5\frac{3}{4} + 2\frac{3}{4} = \underline{\hspace{1cm}}$

36 $5\frac{1}{5} + 4\frac{3}{5} = \underline{\hspace{1cm}}$

39 $1\frac{1}{8} + 5\frac{1}{8} = \underline{\hspace{1cm}}$

Tenths and Hundredths

WORKED EXAMPLE

$$47.\underline{7}7 \rightarrow \underline{0.07}$$

19. Decimal place value

Write the value of the highlighted digit.

- | | | | | | | | |
|----|------------------------|----|------------------------|----|------------------------|----|------------------------|
| 1 | 23. <u>6</u> 9 → _____ | 2 | 44. <u>1</u> 9 → _____ | 3 | 11. <u>4</u> 8 → _____ | 4 | 89. <u>8</u> 2 → _____ |
| 5 | 46. <u>6</u> 5 → _____ | 6 | 35. <u>7</u> 2 → _____ | 7 | 88. <u>3</u> 3 → _____ | 8 | 48. <u>9</u> 7 → _____ |
| 9 | 29. <u>2</u> 3 → _____ | 10 | 75. <u>0</u> 1 → _____ | 11 | 68. <u>2</u> 7 → _____ | 12 | 10. <u>7</u> 8 → _____ |
| 13 | 77. <u>3</u> 2 → _____ | 14 | 37. <u>7</u> 4 → _____ | 15 | 21. <u>3</u> 9 → _____ | 16 | 76. <u>9</u> 5 → _____ |
| 17 | 84. <u>8</u> 5 → _____ | 18 | 56. <u>6</u> 0 → _____ | 19 | 14. <u>6</u> 8 → _____ | 20 | 75. <u>7</u> 3 → _____ |
| 21 | 67. <u>6</u> 6 → _____ | 22 | 2. <u>4</u> 9 → _____ | 23 | 77. <u>7</u> 5 → _____ | 24 | 62. <u>6</u> 0 → _____ |

Comparing Decimals

WORKED EXAMPLE

$2.9 \boxed{<} 7.48$

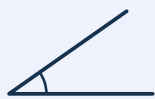
20. Compare decimals

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

- | | | | |
|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 1 $5.4 \boxed{} 2.5$ | 2 $6.5 \boxed{} 3.7$ | 3 $2.0 \boxed{} 2.71$ | 4 $7.40 \boxed{} 9.81$ |
| 5 $0.81 \boxed{} 7.6$ | 6 $5.9 \boxed{} 2.37$ | 7 $7.46 \boxed{} 2.6$ | 8 $6.2 \boxed{} 2.65$ |
| 9 $2.8 \boxed{} 6.0$ | 10 $3.12 \boxed{} 5.71$ | 11 $1.05 \boxed{} 7.5$ | 12 $2.48 \boxed{} 6.41$ |
| 13 $3.4 \boxed{} 3.40$ | 14 $6.57 \boxed{} 2.15$ | 15 $1.26 \boxed{} 9.88$ | 16 $1.7 \boxed{} 5.4$ |
| 17 $7.21 \boxed{} 6.05$ | 18 $8.3 \boxed{} 7.4$ | 19 $3.66 \boxed{} 5.6$ | 20 $4.0 \boxed{} 0.89$ |
| 21 $6.7 \boxed{} 9.7$ | 22 $9.97 \boxed{} 1.21$ | 23 $4.4 \boxed{} 0.6$ | 24 $6.28 \boxed{} 8.56$ |
| 25 $9.2 \boxed{} 0.36$ | 26 $4.04 \boxed{} 1.81$ | 27 $3.0 \boxed{} 3.00$ | 28 $8.8 \boxed{} 4.58$ |
| 29 $9.35 \boxed{} 2.8$ | 30 $0.3 \boxed{} 1.96$ | | |

Types of Angle

WORKED EXAMPLE



acute

right

obtuse

21. Acute, right, or obtuse

Write whether each angle is acute, right, or obtuse.

1



acute

right

obtuse

2



acute

right

obtuse

3



acute

right

obtuse

4



acute

right

obtuse

5



acute

right

obtuse

6



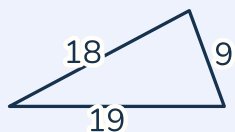
acute

right

obtuse

Types of Triangle

WORKED EXAMPLE



equilateral

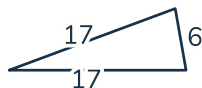
isosceles

scalene

22. Classify triangles by angles or sides

Name each triangle.

1

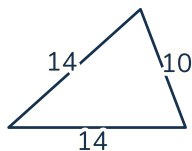


equilateral

isosceles

scalene

2

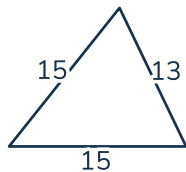


equilateral

isosceles

scalene

3

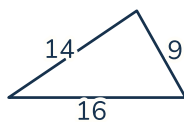


equilateral

isosceles

scalene

4

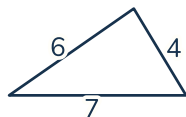


equilateral

isosceles

scalene

5

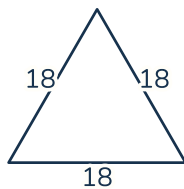


equilateral

isosceles

scalene

6



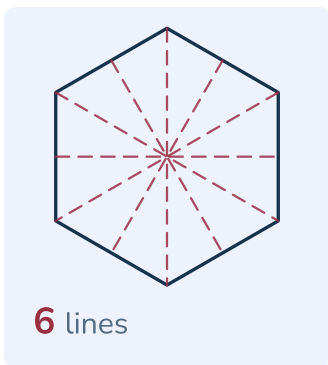
equilateral

isosceles

scalene

Lines of Symmetry

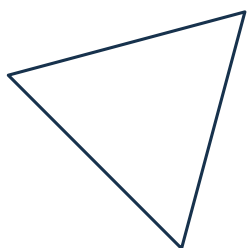
WORKED EXAMPLE



23. Lines of symmetry

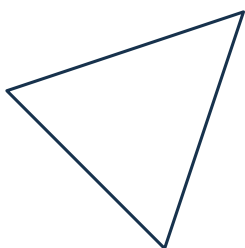
Write how many lines of symmetry each shape has.

1



_____ lines

2



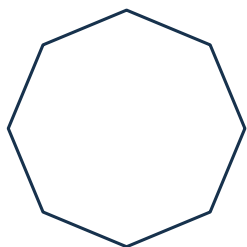
_____ lines

3



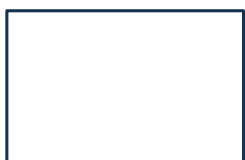
_____ lines

4



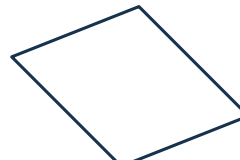
_____ lines

5



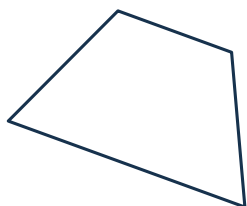
_____ lines

6



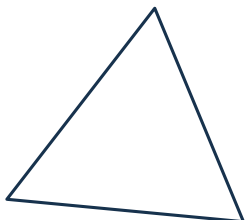
_____ lines

7



_____ lines

8



_____ lines

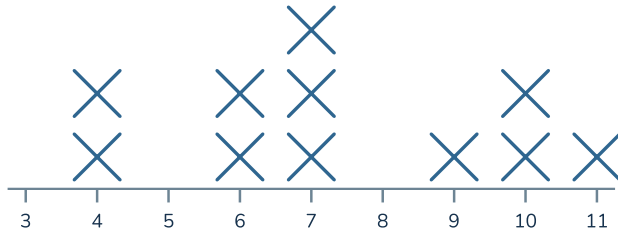
Line Plots and Bar Graphs

24. Line plots

Read each line plot and answer the question.

1

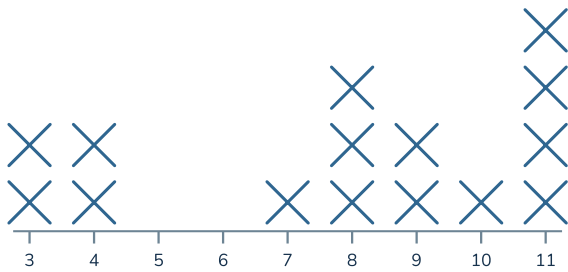
Length of our pencils (inches)



How many more pencils measured 7 inches than 4 inches?

2

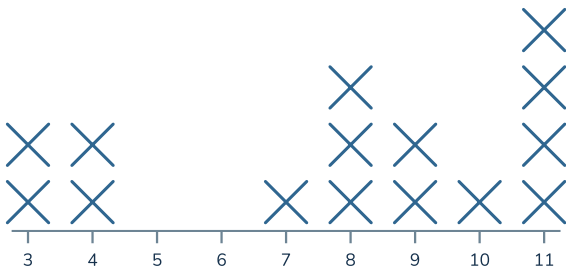
Height of the bean plants (inches)



How many plants were measured altogether?

3

Height of the bean plants (inches)

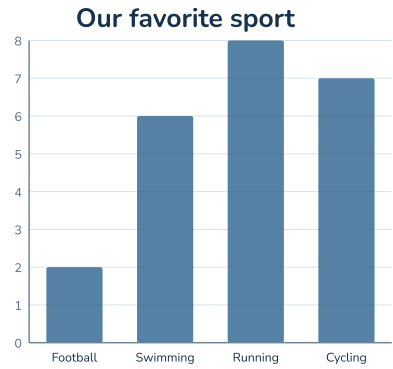


How many plants were longer than 4 inches?

25. Bar graphs

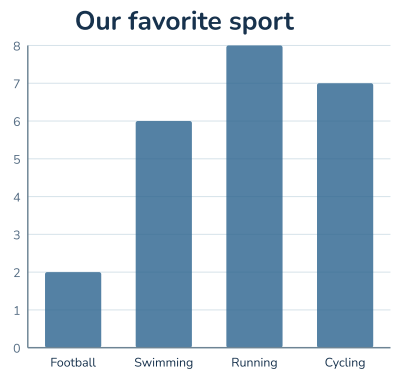
Read each bar graph and answer the question.

4



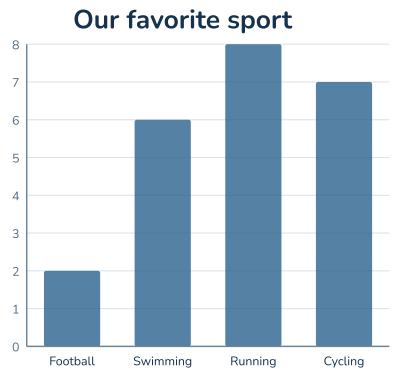
How many more chose running than chose football?

5



How many fewer chose swimming than chose running?

6



How many altogether?

Review: Multiplying

WORKED EXAMPLE

$$\begin{array}{r}
 779 \\
 \times 19 \\
 \hline
 7011 \\
 7790 \\
 \hline
 14801
 \end{array}$$

26. Multiply multi-digit numbers

Multiply. Show your working.

$$\begin{array}{r}
 1 \quad 993 \\
 \times 29 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2 \quad 273 \\
 \times 37 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 3 \quad 721 \\
 \times 57 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 4 \quad 933 \\
 \times 28 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5 \quad 898 \\
 \times 71 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 6 \quad 721 \\
 \times 11 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 7 \quad 452 \\
 \times 54 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 8 \quad 602 \\
 \times 66 \\
 \hline
 \end{array}$$

Review: Division and Factors

WORKED EXAMPLE

$$33 \div 5 = \underline{6} \text{ R } \underline{3}$$

27. Division with remainders

Divide. Write the quotient and the remainder.

- | | | |
|---|--|---|
| 1 $57 \div 5 = \underline{\quad} \text{ R } \underline{\quad}$ | 2 $7 \div 2 = \underline{\quad} \text{ R } \underline{\quad}$ | 3 $112 \div 9 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 4 $47 \div 5 = \underline{\quad} \text{ R } \underline{\quad}$ | 5 $77 \div 8 = \underline{\quad} \text{ R } \underline{\quad}$ | 6 $43 \div 6 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 7 $86 \div 9 = \underline{\quad} \text{ R } \underline{\quad}$ | 8 $27 \div 5 = \underline{\quad} \text{ R } \underline{\quad}$ | 9 $63 \div 8 = \underline{\quad} \text{ R } \underline{\quad}$ |
| 10 $46 \div 5 = \underline{\quad} \text{ R } \underline{\quad}$ | 11 $100 \div 9 = \underline{\quad} \text{ R } \underline{\quad}$ | 12 $82 \div 8 = \underline{\quad} \text{ R } \underline{\quad}$ |

28. List the factors

List all the factors of each number.

- | | | | |
|----|----|---|-------|
| 13 | 39 | → | _____ |
| 14 | 4 | → | _____ |
| 15 | 32 | → | _____ |
| 16 | 14 | → | _____ |
| 17 | 16 | → | _____ |
| 18 | 27 | → | _____ |
| 19 | 18 | → | _____ |
| 20 | 23 | → | _____ |
| 21 | 24 | → | _____ |
| 22 | 8 | → | _____ |
| 23 | 28 | → | _____ |
| 24 | 30 | → | _____ |
| 25 | 26 | → | _____ |
| 26 | 12 | → | _____ |
| 27 | 17 | → | _____ |

Answer Key (1 of 6)

Place Value in Four-Digit Numbers

The value of a digit

1. 7723 (3) $\rightarrow$ 3
2. 4627 (7) $\rightarrow$ 7
3. 7264 (2) $\rightarrow$ 200
4. 2835 (3) $\rightarrow$ 30
5. 7131 (1) $\rightarrow$ 1
6. 7476 (7) $\rightarrow$ 7000
7. 3983 (8) $\rightarrow$ 80
8. 5893 (9) $\rightarrow$ 90
9. 8065 (6) $\rightarrow$ 60
10. 3945 (4) $\rightarrow$ 40
11. 2258 (2) $\rightarrow$ 200
12. 9797 (9) $\rightarrow$ 90
13. 5341 (4) $\rightarrow$ 40
14. 4585 (5) $\rightarrow$ 500

Writing expanded form

15. $1691 = 1000 + 600 + 90 + 1$
16. $5767 = 5000 + 700 + 60 + 7$
17. $6267 = 6000 + 200 + 60 + 7$
18. $8807 = 8000 + 800 + 7$
19. $1581 = 1000 + 500 + 80 + 1$
20. $8888 = 8000 + 800 + 80 + 8$
21. $7968 = 7000 + 900 + 60 + 8$
22. $8573 = 8000 + 500 + 70 + 3$
23. $3509 = 3000 + 500 + 9$
24. $6372 = 6000 + 300 + 70 + 2$
25. $7229 = 7000 + 200 + 20 + 9$
26. $6759 = 6000 + 700 + 50 + 9$

Rounding to the Nearest Ten

Rounding numbers

1. $713 \approx 710$
2. $172 \approx 170$
3. $72 \approx 70$
4. $17 \approx 20$
5. $947 \approx 950$
6. $751 \approx 750$
7. $74 \approx 70$
8. $21 \approx 20$
9. $305 \approx 310$
10. $539 \approx 540$
11. $531 \approx 530$
12. $327 \approx 330$
13. $303 \approx 300$

Rounding to the Nearest Ten (continued)

Rounding numbers (continued)

14. $311 \approx 310$
15. $82 \approx 80$
16. $589 \approx 590$
17. $639 \approx 640$
18. $499 \approx 500$
19. $716 \approx 720$
20. $675 \approx 680$
21. $491 \approx 490$
22. $542 \approx 540$
23. $147 \approx 150$
24. $963 \approx 960$
25. $126 \approx 130$
26. $957 \approx 960$
27. $304 \approx 300$

Estimating a sum

28. $126 + 191 \approx 130 + 190 = 320$
29. $161 + 235 \approx 160 + 240 = 400$
30. $126 + 422 \approx 130 + 420 = 550$
31. $133 + 532 \approx 130 + 530 = 660$
32. $112 + 862 \approx 110 + 860 = 970$
33. $105 + 147 \approx 110 + 150 = 260$
34. $133 + 323 \approx 130 + 320 = 450$
35. $119 + 697 \approx 120 + 700 = 820$

Estimating a difference

36. $196 - 191 \approx 200 - 190 = 10$
37. $245 - 213 \approx 250 - 210 = 40$
38. $301 - 125 \approx 300 - 130 = 170$
39. $182 - 136 \approx 180 - 140 = 40$
40. $413 - 213 \approx 410 - 210 = 200$
41. $406 - 301 \approx 410 - 300 = 110$
42. $133 - 114 \approx 130 - 110 = 20$
43. $399 - 235 \approx 400 - 240 = 160$

Estimating a product

44. $41 \times 25 \approx 40 \times 30 = 1200$
45. $62 \times 11 \approx 60 \times 10 = 600$
46. $83 \times 46 \approx 80 \times 50 = 4000$
47. $44 \times 53 \approx 40 \times 50 = 2000$
48. $62 \times 74 \approx 60 \times 70 = 4200$
49. $47 \times 81 \approx 50 \times 80 = 4000$
50. $14 \times 11 \approx 10 \times 10 = 100$
51. $38 \times 67 \approx 40 \times 70 = 2800$

Answer Key (2 of 6)

Multiplying Two Digits by One

Multiply multi-digit numbers

1. $34 \times 3 = 102$
2. $71 \times 2 = 142$
3. $77 \times 3 = 231$
4. $13 \times 2 = 26$
5. $11 \times 6 = 66$
6. $80 \times 4 = 320$
7. $85 \times 2 = 170$
8. $78 \times 8 = 624$
9. $15 \times 4 = 60$
10. $91 \times 3 = 273$
11. $56 \times 3 = 168$
12. $49 \times 2 = 98$

Multiplying Three Digits by One

Multiply multi-digit numbers

1. $719 \times 2 = 1438$
2. $395 \times 5 = 1975$
3. $760 \times 2 = 1520$
4. $104 \times 4 = 416$
5. $157 \times 5 = 785$
6. $219 \times 9 = 1971$
7. $586 \times 9 = 5274$
8. $497 \times 3 = 1491$
9. $537 \times 3 = 1611$
10. $903 \times 2 = 1806$
11. $573 \times 2 = 1146$
12. $391 \times 2 = 782$
13. $433 \times 5 = 2165$
14. $892 \times 6 = 5352$
15. $328 \times 2 = 656$
16. $113 \times 2 = 226$
17. $807 \times 4 = 3228$
18. $274 \times 3 = 822$
19. $730 \times 5 = 3650$
20. $287 \times 4 = 1148$
21. $225 \times 8 = 1800$
22. $744 \times 2 = 1488$
23. $908 \times 3 = 2724$

Multiplying Two Digits by Two

Multiply multi-digit numbers

1. $11 \times 99 = 1089$
2. $30 \times 61 = 1830$

Multiplying Two Digits by Two (continued)

Multiply multi-digit numbers (continued)

3. $56 \times 18 = 1008$
4. $34 \times 43 = 1462$
5. $95 \times 99 = 9405$
6. $29 \times 11 = 319$
7. $42 \times 61 = 2562$
8. $18 \times 14 = 252$
9. $40 \times 38 = 1520$
10. $67 \times 36 = 2412$
11. $63 \times 21 = 1323$
12. $60 \times 83 = 4980$
13. $33 \times 40 = 1320$
14. $35 \times 86 = 3010$
15. $10 \times 19 = 190$

Division with Remainders

Division with remainders

1. $7 \div 3 = 2 \text{ R } 1$
2. $50 \div 7 = 7 \text{ R } 1$
3. $28 \div 5 = 5 \text{ R } 3$
4. $13 \div 2 = 6 \text{ R } 1$
5. $67 \div 9 = 7 \text{ R } 4$
6. $22 \div 9 = 2 \text{ R } 4$
7. $59 \div 5 = 11 \text{ R } 4$
8. $27 \div 5 = 5 \text{ R } 2$
9. $55 \div 6 = 9 \text{ R } 1$
10. $17 \div 2 = 8 \text{ R } 1$
11. $79 \div 7 = 11 \text{ R } 2$
12. $30 \div 8 = 3 \text{ R } 6$
13. $61 \div 8 = 7 \text{ R } 5$
14. $33 \div 4 = 8 \text{ R } 1$
15. $30 \div 4 = 7 \text{ R } 2$
16. $115 \div 9 = 12 \text{ R } 7$
17. $45 \div 7 = 6 \text{ R } 3$
18. $26 \div 3 = 8 \text{ R } 2$
19. $32 \div 3 = 10 \text{ R } 2$

Word problems

20. $24 \div 6 = 4$ trays
21. $77 \div 7 = 11$ food pellets
22. $20 \div 5 = 4$ shelves

Long Division

Long division

1. $330 \div 6 = 55$

Answer Key (3 of 6)

Long Division (continued)

Long division (continued)

2. $411 \div 3 = 137$
3. $279 \div 9 = 31$
4. $260 \div 4 = 65$
5. $768 \div 8 = 96$
6. $525 \div 7 = 75$
7. $245 \div 5 = 49$
8. $224 \div 2 = 112$
9. $560 \div 5 = 112$

Long Division with Remainders

Long division with remainders

1. $404 \div 3 = 134 \text{ R } 2$
2. $627 \div 7 = 89 \text{ R } 4$
3. $171 \div 8 = 21 \text{ R } 3$
4. $389 \div 6 = 64 \text{ R } 5$
5. $888 \div 7 = 126 \text{ R } 6$
6. $545 \div 3 = 181 \text{ R } 2$
7. $398 \div 7 = 56 \text{ R } 6$
8. $390 \div 8 = 48 \text{ R } 6$
9. $438 \div 9 = 48 \text{ R } 6$
10. $817 \div 5 = 163 \text{ R } 2$

Factors

List the factors

1. $19 \rightarrow 1, 19$
2. $39 \rightarrow 1, 3, 13, 39$
3. $2 \rightarrow 1, 2$
4. $12 \rightarrow 1, 2, 3, 4, 6, 12$
5. $23 \rightarrow 1, 23$
6. $33 \rightarrow 1, 3, 11, 33$
7. $25 \rightarrow 1, 5, 25$
8. $24 \rightarrow 1, 2, 3, 4, 6, 8, 12, 24$
9. $5 \rightarrow 1, 5$
10. $26 \rightarrow 1, 2, 13, 26$
11. $9 \rightarrow 1, 3, 9$
12. $8 \rightarrow 1, 2, 4, 8$
13. $20 \rightarrow 1, 2, 4, 5, 10, 20$
14. $37 \rightarrow 1, 37$
15. $34 \rightarrow 1, 2, 17, 34$
16. $3 \rightarrow 1, 3$
17. $40 \rightarrow 1, 2, 4, 5, 8, 10, 20, 40$
18. $7 \rightarrow 1, 7$
19. $22 \rightarrow 1, 2, 11, 22$

Factors (continued)

List the factors (continued)

20. $28 \rightarrow 1, 2, 4, 7, 14, 28$
21. $31 \rightarrow 1, 31$

Multiples

Multiples

1. $13 \rightarrow 13, 26, 39, 52, 65$
2. $19 \rightarrow 19, 38, 57, 76, 95$
3. $7 \rightarrow 7, 14, 21, 28, 35$
4. $30 \rightarrow 30, 60, 90, 120, 150$
5. $4 \rightarrow 4, 8, 12, 16, 20$
6. $25 \rightarrow 25, 50, 75, 100, 125$
7. $8 \rightarrow 8, 16, 24, 32, 40$
8. $39 \rightarrow 39, 78, 117, 156, 195$
9. $27 \rightarrow 27, 54, 81, 108, 135$
10. $2 \rightarrow 2, 4, 6, 8, 10$
11. $36 \rightarrow 36, 72, 108, 144, 180$

Circling multiples

12. $2 \rightarrow 32, 36$
13. $6 \rightarrow 18, 24, 30$
14. $5 \rightarrow 10, 15$
15. $11 \rightarrow 11, 33$
16. $2 \rightarrow 6, 8, 30$
17. $7 \rightarrow 7, 28, 35$

Adding and Subtracting Fractions

Add and subtract fractions

1. $\frac{6}{7} + \frac{2}{7} = \frac{8}{7}$
2. $\frac{4}{7} + \frac{4}{7} = \frac{8}{7}$
3. $\frac{2}{7} - \frac{1}{7} = \frac{1}{7}$
4. $\frac{1}{7} + \frac{4}{7} = \frac{5}{7}$
5. $\frac{3}{5} - \frac{2}{5} = \frac{1}{5}$
6. $\frac{1}{7} + \frac{6}{7} = 1$
7. $\frac{6}{8} + \frac{7}{8} = \frac{13}{8}$
8. $\frac{3}{4} - \frac{1}{4} = \frac{1}{2}$
9. $\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$
10. $\frac{6}{8} - \frac{5}{8} = \frac{1}{8}$
11. $\frac{3}{6} + \frac{3}{6} = 1$
12. $\frac{6}{8} - \frac{3}{8} = \frac{3}{8}$
13. $\frac{4}{8} + \frac{6}{8} = \frac{5}{4}$
14. $\frac{4}{7} - \frac{2}{7} = \frac{2}{7}$
15. $\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$
16. $\frac{4}{6} - \frac{3}{6} = \frac{1}{6}$
17. $\frac{6}{8} + \frac{3}{8} = \frac{9}{8}$

Answer Key (4 of 6)

Adding and Subtracting Fractions (continued)

Add and subtract fractions (continued)

18. $7/8 - 5/8 = 1/4$
19. $7/8 + 3/8 = 5/4$
20. $5/8 - 4/8 = 1/8$
21. $6/7 + 3/7 = 9/7$
22. $3/8 - 2/8 = 1/8$
23. $6/7 + 4/7 = 10/7$
24. $2/5 - 1/5 = 1/5$
25. $3/7 + 1/7 = 4/7$
26. $5/8 - 3/8 = 1/4$
27. $3/8 + 7/8 = 5/4$
28. $6/8 - 2/8 = 1/2$
29. $3/6 + 4/6 = 7/6$
30. $2/4 - 1/4 = 1/4$
31. $3/7 + 4/7 = 1$
32. $6/7 - 4/7 = 2/7$
33. $4/5 + 3/5 = 7/5$
34. $3/6 - 2/6 = 1/6$
35. $1/3 + 1/3 = 2/3$
36. $6/7 - 5/7 = 1/7$
37. $3/6 + 5/6 = 4/3$
38. $5/7 - 3/7 = 2/7$
39. $5/7 + 3/7 = 8/7$
40. $3/8 - 1/8 = 1/4$
41. $2/8 + 5/8 = 7/8$
42. $4/8 - 2/8 = 1/4$

Mixed Numbers

Adding mixed numbers

1. $5 \frac{1}{7} + 4 \frac{4}{7} = 9 \frac{5}{7}$
2. $4 \frac{4}{7} + 4 \frac{4}{7} = 9 \frac{1}{7}$
3. $5 \frac{1}{8} + 3 \frac{5}{8} = 8 \frac{3}{4}$
4. $3 \frac{6}{7} + 5 \frac{6}{7} = 9 \frac{5}{7}$
5. $2 \frac{1}{5} + 4 \frac{3}{5} = 6 \frac{4}{5}$
6. $2 \frac{3}{7} + 4 \frac{2}{7} = 6 \frac{5}{7}$
7. $5 \frac{2}{5} + 3 \frac{4}{5} = 9 \frac{1}{5}$
8. $2 \frac{3}{7} + 2 \frac{1}{7} = 4 \frac{4}{7}$
9. $1 \frac{4}{5} + 2 \frac{1}{5} = 4$
10. $4 \frac{3}{7} + 3 \frac{3}{7} = 7 \frac{6}{7}$
11. $1 \frac{5}{8} + 5 \frac{5}{8} = 7 \frac{1}{4}$
12. $4 \frac{3}{7} + 5 \frac{1}{7} = 9 \frac{4}{7}$
13. $5 \frac{4}{5} + 1 \frac{2}{5} = 7 \frac{1}{5}$
14. $1 \frac{2}{7} + 1 \frac{3}{7} = 2 \frac{5}{7}$
15. $2 \frac{2}{5} + 5 \frac{3}{5} = 8$

Mixed Numbers (continued)

Adding mixed numbers (continued)

16. $1 \frac{5}{8} + 1 \frac{1}{8} = 2 \frac{3}{4}$
17. $2 \frac{4}{5} + 4 \frac{1}{5} = 7$
18. $2 \frac{4}{7} + 3 \frac{1}{7} = 5 \frac{5}{7}$
19. $1 \frac{5}{8} + 2 \frac{5}{8} = 4 \frac{1}{4}$
20. $2 \frac{1}{7} + 3 \frac{3}{7} = 5 \frac{4}{7}$
21. $3 \frac{1}{8} + 3 \frac{7}{8} = 7$
22. $2 \frac{3}{8} + 3 \frac{1}{8} = 5 \frac{1}{2}$
23. $4 \frac{6}{7} + 3 \frac{1}{7} = 8$
24. $2 \frac{2}{7} + 5 \frac{4}{7} = 7 \frac{6}{7}$
25. $2 \frac{3}{5} + 3 \frac{3}{5} = 6 \frac{1}{5}$
26. $5 \frac{1}{7} + 2 \frac{4}{7} = 7 \frac{5}{7}$
27. $3 \frac{4}{7} + 2 \frac{4}{7} = 6 \frac{1}{7}$
28. $2 \frac{1}{8} + 2 \frac{3}{8} = 4 \frac{1}{2}$
29. $1 \frac{1}{7} + 4 \frac{6}{7} = 6$
30. $4 \frac{3}{5} + 4 \frac{1}{5} = 8 \frac{4}{5}$
31. $2 \frac{5}{8} + 3 \frac{3}{8} = 6$
32. $3 \frac{1}{7} + 4 \frac{4}{7} = 7 \frac{5}{7}$
33. $5 \frac{3}{4} + 2 \frac{3}{4} = 8 \frac{1}{2}$
34. $1 \frac{3}{8} + 5 \frac{1}{8} = 6 \frac{1}{2}$
35. $3 \frac{5}{8} + 5 \frac{7}{8} = 9 \frac{1}{2}$
36. $5 \frac{1}{5} + 4 \frac{3}{5} = 9 \frac{4}{5}$
37. $2 \frac{1}{5} + 2 \frac{3}{5} = 4 \frac{4}{5}$
38. $2 \frac{5}{8} + 1 \frac{7}{8} = 4 \frac{1}{2}$
39. $1 \frac{1}{8} + 5 \frac{1}{8} = 6 \frac{1}{4}$
40. $1 \frac{4}{5} + 1 \frac{2}{5} = 3 \frac{1}{5}$
41. $4 \frac{1}{6} + 3 \frac{1}{6} = 7 \frac{1}{3}$

Tenths and Hundredths

Decimal place value

1. 23.69 (9) $\rightarrow$ 0.09
2. 44.19 (9) $\rightarrow$ 0.09
3. 11.48 (8) $\rightarrow$ 0.08
4. 89.82 (8) $\rightarrow$ 0.8
5. 46.65 (5) $\rightarrow$ 0.05
6. 35.72 (2) $\rightarrow$ 0.02
7. 88.33 (3) $\rightarrow$ 0.3
8. 48.97 (9) $\rightarrow$ 0.9
9. 29.23 (2) $\rightarrow$ 0.2
10. 75.01 (1) $\rightarrow$ 0.01
11. 68.27 (2) $\rightarrow$ 0.2
12. 10.78 (7) $\rightarrow$ 0.7
13. 77.32 (3) $\rightarrow$ 0.3
14. 37.74 (7) $\rightarrow$ 0.7

Answer Key (5 of 6)

Tenths and Hundredths (continued)

Decimal place value (continued)

15. 21.39 (9) $\rightarrow$ 0.09
16. 76.95 (5) $\rightarrow$ 0.05
17. 84.85 (8) $\rightarrow$ 0.8
18. 56.60 (6) $\rightarrow$ 0.6
19. 14.68 (8) $\rightarrow$ 0.08
20. 75.73 (3) $\rightarrow$ 0.03
21. 67.66 (6) $\rightarrow$ 0.6
22. 2.49 (9) $\rightarrow$ 0.09
23. 77.75 (5) $\rightarrow$ 0.05
24. 62.60 (6) $\rightarrow$ 0.6

Comparing Decimals

Compare decimals

1. $5.4 > 2.5$
2. $6.5 > 3.7$
3. $2.0 < 2.71$
4. $7.40 < 9.81$
5. $0.81 < 7.6$
6. $5.9 > 2.37$
7. $7.46 > 2.6$
8. $6.2 > 2.65$
9. $2.8 < 6.0$
10. $3.12 < 5.71$
11. $1.05 < 7.5$
12. $2.48 < 6.41$
13. $3.4 = 3.40$
14. $6.57 > 2.15$
15. $1.26 < 9.88$
16. $1.7 < 5.4$
17. $7.21 > 6.05$
18. $8.3 > 7.4$
19. $3.66 < 5.6$
20. $4.0 > 0.89$
21. $6.7 < 9.7$
22. $9.97 > 1.21$
23. $4.4 > 0.6$
24. $6.28 < 8.56$
25. $9.2 > 0.36$
26. $4.04 > 1.81$
27. $3.0 = 3.00$
28. $8.8 > 4.58$
29. $9.35 > 2.8$
30. $0.3 < 1.96$

Types of Angle

Acute, right, or obtuse

1. 15° : acute
2. 120° : obtuse
3. 75° : acute
4. 155° : obtuse
5. 50° : acute
6. 65° : acute

Types of Triangle

Classify triangles by angles or sides

1. 6, 17, 17: isosceles
2. 10, 14, 14: isosceles
3. 13, 15, 15: isosceles
4. 9, 14, 16: scalene
5. 4, 6, 7: scalene
6. 18, 18, 18: equilateral

Lines of Symmetry

Lines of symmetry

1. equilateral triangle turned 45° : 3
2. isosceles triangle turned 45° : 1
3. parallelogram: 0
4. regular octagon turned 45° : 8
5. rectangle: 2
6. parallelogram turned 45° : 0
7. isosceles trapezoid turned 20° : 1
8. scalene triangle turned 20° : 0

Line Plots and Bar Graphs

Line plots

1. 3 at 7 inches, 2 at 4 inches: $3 - 2 = 1$
2. $2 + 2 + 1 + 3 + 2 + 1 + 4 = 15$
3. longer than 4 inches — 11 plants

Bar graphs

4. Running is $8 - 2 = 6$ more than Football
5. Swimming is $8 - 6 = 2$ fewer than Running
6. $2 + 6 + 8 + 7 = 23$

Review: Multiplying

Multiply multi-digit numbers

1. $993 \times 29 = 28797$
2. $273 \times 37 = 10101$
3. $721 \times 57 = 41097$
4. $933 \times 28 = 26124$

Answer Key (6 of 6)

Review: Multiplying (continued)

Multiply multi-digit numbers (continued)

5. $898 \times 71 = 63758$
6. $721 \times 11 = 7931$
7. $452 \times 54 = 24408$
8. $602 \times 66 = 39732$

Review: Division and Factors

Division with remainders

1. $57 \div 5 = 11 \text{ R } 2$
2. $7 \div 2 = 3 \text{ R } 1$
3. $112 \div 9 = 12 \text{ R } 4$
4. $47 \div 5 = 9 \text{ R } 2$
5. $77 \div 8 = 9 \text{ R } 5$
6. $43 \div 6 = 7 \text{ R } 1$
7. $86 \div 9 = 9 \text{ R } 5$
8. $27 \div 5 = 5 \text{ R } 2$
9. $63 \div 8 = 7 \text{ R } 7$
10. $46 \div 5 = 9 \text{ R } 1$
11. $100 \div 9 = 11 \text{ R } 1$
12. $82 \div 8 = 10 \text{ R } 2$

List the factors

13. $39 \rightarrow 1, 3, 13, 39$
14. $4 \rightarrow 1, 2, 4$
15. $32 \rightarrow 1, 2, 4, 8, 16, 32$
16. $14 \rightarrow 1, 2, 7, 14$
17. $16 \rightarrow 1, 2, 4, 8, 16$
18. $27 \rightarrow 1, 3, 9, 27$
19. $18 \rightarrow 1, 2, 3, 6, 9, 18$
20. $23 \rightarrow 1, 23$
21. $24 \rightarrow 1, 2, 3, 4, 6, 8, 12, 24$
22. $8 \rightarrow 1, 2, 4, 8$
23. $28 \rightarrow 1, 2, 4, 7, 14, 28$
24. $30 \rightarrow 1, 2, 3, 5, 6, 10, 15, 30$
25. $26 \rightarrow 1, 2, 13, 26$
26. $12 \rightarrow 1, 2, 3, 4, 6, 12$
27. $17 \rightarrow 1, 17$

Solutions (1 of 17)

Place Value in Four-Digit Numbers

The value of a digit

1. $772\underline{3} \rightarrow \underline{\quad}$

number: 7 7 2 3
3 $\rightarrow$ 3

Each column is worth ten times the one to its right. Counting them is what tells you the value; the name on its own is the thing that goes wrong under pressure.

Count in from the right: the 3 sits in the ones.

Its VALUE is what it is worth there, not the digit itself: 3 in the ones is 3. That gap between "3" and "3" is the whole of this topic.

2. $462\underline{7} \rightarrow \underline{\quad}$

number: 4 6 2 7
7 $\rightarrow$ 7

Each column is worth ten times the one to its right. Counting them is what tells you the value; the name on its own is the thing that goes wrong under pressure.

Count in from the right: the 7 sits in the ones.

Its VALUE is what it is worth there, not the digit itself: 7 in the ones is 7. That gap between "7" and "7" is the whole of this topic.

Rounding to the Nearest Ten

Rounding numbers

1. $713 \approx \underline{\quad}$

7 1 3
713 $\rightarrow$ 710

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

Now look at the single digit just after it: 3. Nothing further along matters at all.

3 is less than 5, so 713 is nearer 710 than 720. It stays down.

So 713 to the nearest ten is 710.

Solutions (2 of 17)

Rounding to the Nearest Ten (continued)

Rounding numbers (continued)

2. $172 \approx \underline{\hspace{2cm}}$

$$\begin{array}{ccc} 1 & 7 & 2 \\ 172 & \rightarrow & 170 \end{array}$$

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

Now look at the single digit just after it: 2. Nothing further along matters at all.

2 is less than 5, so 172 is nearer 170 than 180. It stays down.

So 172 to the nearest ten is 170.

Estimating a sum

28. $126 + 191 \approx \underline{\hspace{2cm}}$

$$\begin{array}{rcl} 126 & + & 191 \\ 130 & + & 191 \\ 130 & + & 190 \\ & & 320 \end{array}$$

Do not work it out exactly. Round each number first. 126 is nearer 130 than 120, so to the nearest ten it becomes 130.

191 is nearer 190 than 200, so to the nearest ten it becomes 190.

Now it is easy enough to do in your head: $130 + 190 = 320$.

The exact answer is 317, so the estimate of 320 is 3 away. Close enough to catch a wrong answer with, and you did it in your head.

29. $161 + 235 \approx \underline{\hspace{2cm}}$

$$\begin{array}{rcl} 161 & + & 235 \\ 160 & + & 235 \\ 160 & + & 240 \\ & & 400 \end{array}$$

Do not work it out exactly. Round each number first. 161 is nearer 160 than 170, so to the nearest ten it becomes 160.

235 sits exactly halfway between 230 and 240, and a half always rounds up — so 235 becomes 240.

Now it is easy enough to do in your head: $160 + 240 = 400$.

The exact answer is 396, so the estimate of 400 is 4 away. Close enough to catch a wrong answer with, and you did it in your head.

Solutions (3 of 17)

Multiplying Two Digits by One

Multiply multi-digit numbers

1.

$$\begin{array}{r} 34 \\ \times 3 \\ \hline 102 \end{array}$$

34×3 , set out in columns. Multiply one place at a time, starting at the ones on the RIGHT.

The ones: $4 \times 3 = 12$. Write the 2 and carry the 1.

The tens: $3 \times 3 = 9$, and the 1 carried over makes 10. Nothing further to carry into, so all of 10 is written down.

So $34 \times 3 = 102$.

2.

$$\begin{array}{r} 71 \\ \times 2 \\ \hline 142 \end{array}$$

71×2 , set out in columns. Multiply one place at a time, starting at the ones on the RIGHT.

The ones: $1 \times 2 = 2$. Write the 2.

The tens: $7 \times 2 = 14$. Nothing further to carry into, so all of 14 is written down.

So $71 \times 2 = 142$.

Division with Remainders

Division with remainders

1.

$$\begin{array}{r} 2 \\ 3 \overline{)7} \\ 6 \\ \hline 1 \end{array}$$

7 shared into groups of 3. Long division starts at the LEFT — the other way round from adding.

Start at the left. How many 3s fit into 7? 2 of them — write the 2 on top. $2 \times 3 = 6$, and $7 - 6$ leaves 1.

Nothing is left to bring down, and 1 is too small to divide again — so that is the remainder. $7 \div 3 = 2$ remainder 1.

2.

$$\begin{array}{r} 7 \\ 7 \overline{)50} \\ 49 \\ \hline 1 \end{array}$$

50 shared into groups of 7. Long division starts at the LEFT — the other way round from adding.

Start at the left. How many 7s fit into 50? 7 of them — write the 7 on top. $7 \times 7 = 49$, and $50 - 49$ leaves 1.

Nothing is left to bring down, and 1 is too small to divide again — so that is the remainder. $50 \div 7 = 7$ remainder 1.

Solutions (4 of 17)

Division with Remainders (continued)

Word problems

20. Marian packed 24 bread rolls into trays of 6.

How many trays did Marian fill? ____

asked: How many trays did Marian fill?

$$24 \div 6 = 4$$

4 trays

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: 24 and 6. 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.

One total split into groups of a known size, with the question asking HOW MANY groups — which is the other thing dividing asks. So this one is a division: $24 \div 6$.

$24 \div 6 = 4$ trays. And answer the question that was ASKED — "How many trays did Marian fill?" — in trays, because the sum on its own is not yet an answer.

21. Courtney shared 77 food pellets equally among 7 feed bags.

How many food pellets went in each feed bag? ____

asked:

How many food pellets went in each feed bag?

$$77 \div 7 = 11$$

11 food pellets

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: 77 and 7. 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.

One total shared into equal groups, with the question asking how big one group is — sharing is dividing. So this one is a division: $77 \div 7$.

$77 \div 7 = 11$ food pellets. And answer the question that was ASKED — "How many food pellets went in each feed bag?" — in food pellets, because the sum on its own is not yet an answer.

Solutions (5 of 17)

Long Division

Long division

1.

$$\begin{array}{r} 55 \\ 6 \overline{)330} \\ \underline{30} \\ 30 \\ \underline{30} \\ 0 \end{array}$$

330 shared into groups of 6. Long division starts at the LEFT — the other way round from adding.

Start at the left. How many 6s fit into 33? 5 of them — write the 5 on top. $5 \times 6 = 30$, and $33 - 30$ leaves 3. Bring down the 0, which makes 30.

How many 6s fit into 30? 5 — write it on top. $5 \times 6 = 30$, and $30 - 30$ leaves 0.

Nothing is left to bring down and nothing is left over. $330 \div 6 = 55$.

2.

$$\begin{array}{r} 137 \\ 3 \overline{)411} \\ \underline{3} \\ 11 \\ \underline{9} \\ 21 \\ \underline{21} \\ 0 \end{array}$$

411 shared into groups of 3. Long division starts at the LEFT — the other way round from adding.

Start at the left. How many 3s fit into 4? 1 of them — write the 1 on top. $1 \times 3 = 3$, and $4 - 3$ leaves 1. Bring down the 1, which makes 11.

How many 3s fit into 11? 3 — write it on top. $3 \times 3 = 9$, and $11 - 9$ leaves 2. Bring down the 1, which makes 21.

How many 3s fit into 21? 7 — write it on top. $7 \times 3 = 21$, and $21 - 21$ leaves 0.

Nothing is left to bring down and nothing is left over. $411 \div 3 = 137$.

Solutions (6 of 17)

Long Division with Remainders

Long division with remainders

1.

$$\begin{array}{r} 134 \\ 3 \overline{)404} \\ \underline{3} \\ 10 \\ \underline{9} \\ 14 \\ \underline{12} \\ 2 \end{array}$$

404 shared into groups of 3. Long division starts at the LEFT — the other way round from adding.

Start at the left. How many 3s fit into 4? 1 of them — write the 1 on top. $1 \times 3 = 3$, and $4 - 3$ leaves 1. Bring down the 0, which makes 10.

How many 3s fit into 10? 3 — write it on top. $3 \times 3 = 9$, and $10 - 9$ leaves 1. Bring down the 4, which makes 14.

How many 3s fit into 14? 4 — write it on top. $4 \times 3 = 12$, and $14 - 12$ leaves 2.

Nothing is left to bring down, and 2 is too small to divide again — so that is the remainder. $404 \div 3 = 134$ remainder 2.

2.

$$\begin{array}{r} 89 \\ 7 \overline{)627} \\ \underline{56} \\ 67 \\ \underline{63} \\ 4 \end{array}$$

627 shared into groups of 7. Long division starts at the LEFT — the other way round from adding.

Start at the left. How many 7s fit into 62? 8 of them — write the 8 on top. $8 \times 7 = 56$, and $62 - 56$ leaves 6. Bring down the 7, which makes 67.

How many 7s fit into 67? 9 — write it on top. $9 \times 7 = 63$, and $67 - 63$ leaves 4.

Nothing is left to bring down, and 4 is too small to divide again — so that is the remainder. $627 \div 7 = 89$ remainder 4.

Factors

List the factors

1. 19 → _____

so far: 1 19

Factors come in PAIRS — every one you find hands you a second. So work in from both ends rather than trying every number in turn.

$1 \times 19 = 19$, so 1 and 19 are both factors.

The pair has met in the middle, so the list is finished: 1, 19. 2 factors.

Solutions (7 of 17)

Factors (continued)

List the factors (continued)

2. **39** → _____

so far: 1 3 13 39

Factors come in PAIRS — every one you find hands you a second. So work in from both ends rather than trying every number in turn.

$1 \times 39 = 39$, so 1 and 39 are both factors.

$3 \times 13 = 39$, so 3 and 13 are both factors.

The pair has met in the middle, so the list is finished: 1, 3, 13, 39. 4 factors.

Multiples

Multiples

1. **13** → _____

count: 13 26 39 52
65

Multiples of 13 are what you get COUNTING IN 13s — they start at 13 and only get bigger. (Factors are the other way: they go into 13 and are never bigger than it. The two words are swapped more often than either is misunderstood.)

So just count: 13, 26, 39, 52, 65. Each one is 13 more than the last — no dividing, no testing.

2. **19** → _____

count: 19 38 57 76
95

Multiples of 19 are what you get COUNTING IN 19s — they start at 19 and only get bigger. (Factors are the other way: they go into 19 and are never bigger than it. The two words are swapped more often than either is misunderstood.)

So just count: 19, 38, 57, 76, 95. Each one is 19 more than the last — no dividing, no testing.

Solutions (8 of 17)

Adding and Subtracting Fractions

Add and subtract fractions

1. $\frac{6}{7} + \frac{2}{7} = \text{—}$

$$\begin{array}{r} \frac{6}{7} + \frac{2}{7} \\ \frac{6}{7} + \frac{2}{7} = \frac{8}{7} \end{array}$$

Both are sevenths, so the pieces are already the same size. That is what lets them be counted together.

6 of them plus 2 of them is 8 of them: $\frac{8}{7}$. The bottom does not change — the pieces did not change size.

2. $\frac{4}{7} + \frac{4}{7} = \text{—}$

$$\begin{array}{r} \frac{4}{7} + \frac{4}{7} \\ \frac{4}{7} + \frac{4}{7} = \frac{8}{7} \end{array}$$

Both are sevenths, so the pieces are already the same size. That is what lets them be counted together.

4 of them plus 4 of them is 8 of them: $\frac{8}{7}$. The bottom does not change — the pieces did not change size.

Mixed Numbers

Adding mixed numbers

1. $5\frac{1}{7} + 4\frac{4}{7} = \text{—}$

$$\begin{array}{r} \frac{1}{7} + \frac{4}{7} = \frac{5}{7} \\ 5 + 4 = 9 \\ = 9\frac{5}{7} \end{array}$$

A mixed number is a whole and a fraction stuck together. Deal with them separately — wholes with wholes, sevenths with sevenths.

The fractions go together first: $\frac{1}{7} + \frac{4}{7} = \frac{5}{7}$.

Then the wholes: $5 + 4 = 9$.

So the answer is $9\frac{5}{7}$.

Solutions (9 of 17)

Mixed Numbers (continued)

Adding mixed numbers (continued)

2. $4\frac{4}{7} + 4\frac{4}{7} = \underline{\hspace{1cm}}$

$$\begin{array}{rclcl} \frac{4}{7} & + & \frac{4}{7} & = & \frac{8}{7} \\ 4 & + & 4 & = & 8 \\ & & = & 9 & \frac{1}{7} \end{array}$$

A mixed number is a whole and a fraction stuck together. Deal with them separately — wholes with wholes, sevenths with sevenths.

The fractions go together first: $\frac{4}{7} + \frac{4}{7} = \frac{8}{7}$.

Then the wholes: $4 + 4 = 8$.

But $\frac{8}{7}$ is more than one whole — $\frac{7}{7}$ is 1 — so it splits into 1 and $\frac{1}{7}$. Give that whole one to the wholes: $8 + 1 = 9$.

So the answer is $9\frac{1}{7}$.

Tenths and Hundredths

Decimal place value

1. $23.6\underline{9} \rightarrow \underline{\hspace{1cm}}$

$$\begin{array}{rcl} \text{number:} & 2 & 3 & . & 6 & \mathbf{9} \\ & & & & & 9 \rightarrow \mathbf{0.09} \end{array}$$

The places do not mirror each other around the point — there is no "oneths". Going right they are tenths, hundredths, thousandths: each one ten times SMALLER than the last.

Count in from the point: the 9 sits in the hundredths.

Its VALUE is what it is worth there, not the digit itself: 9 in the hundredths is 0.09. That gap between "9" and "0.09" is the whole of this topic.

2. $44.1\underline{9} \rightarrow \underline{\hspace{1cm}}$

$$\begin{array}{rcl} \text{number:} & 4 & 4 & . & 1 & \mathbf{9} \\ & & & & & 9 \rightarrow \mathbf{0.09} \end{array}$$

The places do not mirror each other around the point — there is no "oneths". Going right they are tenths, hundredths, thousandths: each one ten times SMALLER than the last.

Count in from the point: the 9 sits in the hundredths.

Its VALUE is what it is worth there, not the digit itself: 9 in the hundredths is 0.09. That gap between "9" and "0.09" is the whole of this topic.

Solutions (10 of 17)

Comparing Decimals

Compare decimals

1. $5.4 \square 2.5$

$$\begin{array}{ccc} 5.4 & ? & 2.5 \\ 54 \text{ tenths} & > & 25 \text{ tenths} \\ 5.4 & > & 2.5 \end{array}$$

Both have 1 figure after the point already, so they are counting the same sized pieces.

Now they are both tenths: 54 against 25. 54 is more. So $5.4 > 2.5$.

2. $6.5 \square 3.7$

$$\begin{array}{ccc} 6.5 & ? & 3.7 \\ 65 \text{ tenths} & > & 37 \text{ tenths} \\ 6.5 & > & 3.7 \end{array}$$

Both have 1 figure after the point already, so they are counting the same sized pieces.

Now they are both tenths: 65 against 37. 65 is more. So $6.5 > 3.7$.

Types of Angle

Acute, right, or obtuse

1.



acute

right

obtuse

$$\begin{array}{ccc} 15^\circ & \text{vs} & 90^\circ \\ 15 & < & 90 \\ 15^\circ & \rightarrow & \text{acute} \end{array}$$

Do not judge it by how big it looks — a long pair of arms makes an angle look wider than it is, and the arms are not the angle. Compare it to a RIGHT ANGLE instead; that is the one you can picture exactly.

15 is less than 90.

Smaller than a right angle is ACUTE. (A useful check: it fits inside the corner of a page.)

Solutions (11 of 17)

Types of Angle (continued)

Acute, right, or obtuse (continued)

2.



acute

right

obtuse

120° vs 90°

120 > 90

$120^\circ \rightarrow$ obtuse

Do not judge it by how big it looks — a long pair of arms makes an angle look wider than it is, and the arms are not the angle. Compare it to a RIGHT ANGLE instead; that is the one you can picture exactly.

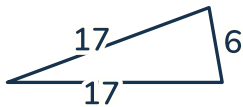
120 is more than 90.

Bigger than a right angle is OBTUSE. (It cannot fit inside the corner of a page — but it is still less than a straight line, which would be 180.)

Types of Triangle

Classify triangles by angles or sides

1.



equilateral

isosceles

scalene

sides: 6 cm 17 cm 17 cm

isosceles

Every triangle has TWO names — one for its angles and one for its sides — and it has both at once. This question is asking for the SIDE name, so look only at the side lengths.

Count how many are the SAME, not how long they are: two match and one does not.

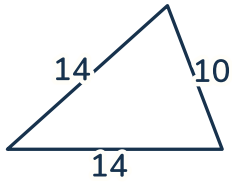
Exactly two equal is ISOSCELES. (Equilateral counts as isosceles too, but when all three match the question wants the more exact name.)

Solutions (12 of 17)

Types of Triangle (continued)

Classify triangles by angles or sides (continued)

2.



equilateral

isosceles

scalene

sides: 10 cm 14 cm
14 cm

isosceles

Every triangle has TWO names — one for its angles and one for its sides — and it has both at once. This question is asking for the SIDE name, so look only at the side lengths.

Count how many are the SAME, not how long they are: two match and one does not.

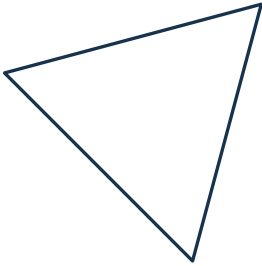
Exactly two equal is ISOSCELES. (Equilateral counts as isosceles too, but when all three match the question wants the more exact name.)

Solutions (13 of 17)

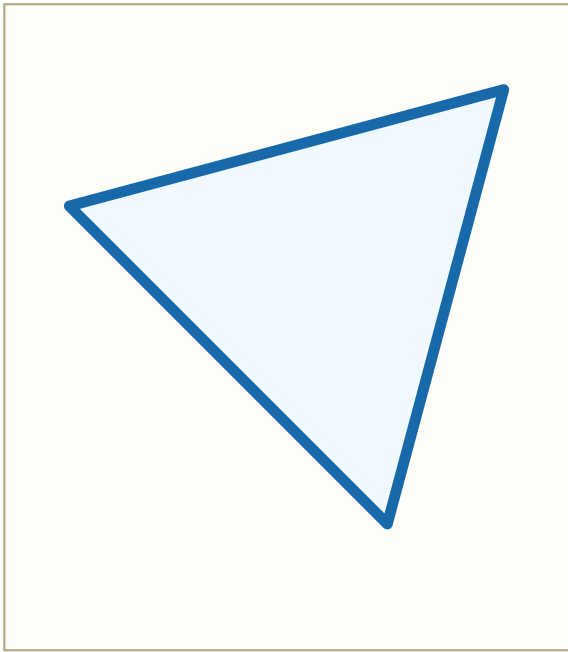
Lines of Symmetry

Lines of symmetry

1.



— lines



A line of symmetry is a FOLD: crease along it and the two halves must land exactly on each other. Not "looks balanced" — land on each other.

Here is one of them. Crease along that line and the part on the left lands exactly on the part on the right — that is what makes it count.

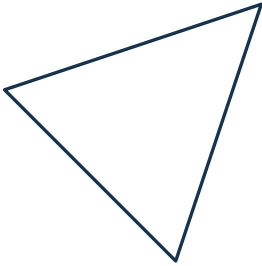
Every other crease that works is drawn now — 3 altogether for an equilateral triangle.

Solutions (14 of 17)

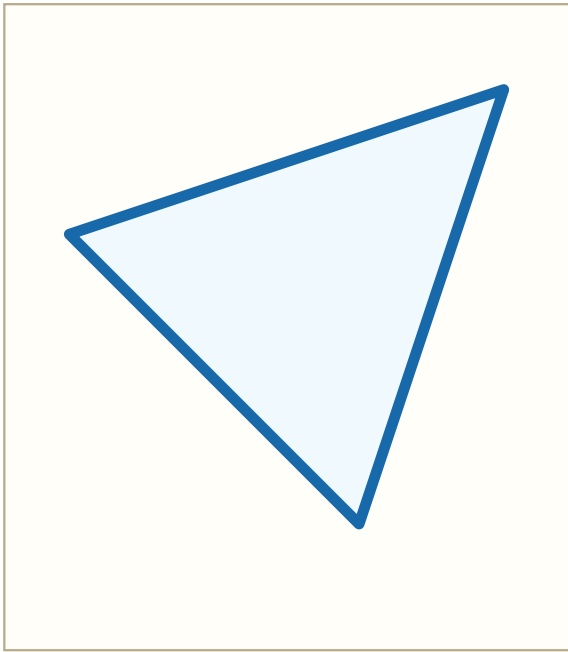
Lines of Symmetry (continued)

Lines of symmetry (continued)

2.



— lines



A line of symmetry is a FOLD: crease along it and the two halves must land exactly on each other. Not "looks balanced" — land on each other.

Here is one of them. Crease along that line and the part on the left lands exactly on the part on the right — that is what makes it count.

And that is the only one: an isosceles triangle has 1 line of symmetry.

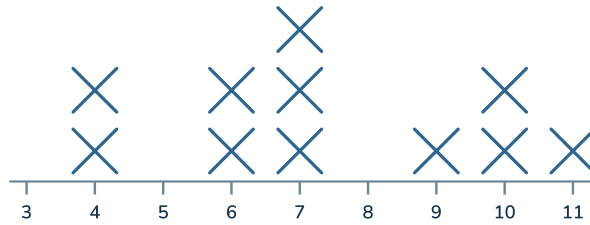
Solutions (15 of 17)

Line Plots and Bar Graphs

Line plots

1.

Length of our pencils (inches)



How many more pencils measured 7 inches than 4 inches?

4 inches: 2 pencils

6 inches: 2 pencils

7 inches: 3 pencils

9 inches: 1 pencils

10 inches: 2 pencils

11 inches: 1 pencils

1

A line plot is not bars to read off a scale — each mark is one pencil. 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: 2 at 4, 2 at 6, 3 at 7, 1 at 9, 2 at 10, 1 at 11.

3 at 7 inches, 2 at 4 inches: $3 - 2 = 1$ — so the answer is 1.

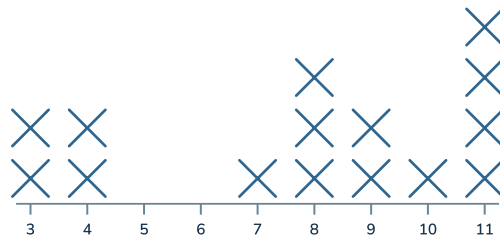
Solutions (16 of 17)

Line Plots and Bar Graphs (continued)

Line plots (continued)

2.

Height of the bean plants (inches)



How many plants were measured altogether?

3 inches: 2 plants
4 inches: 2 plants
7 inches: 1 plants
8 inches: 3 plants
9 inches: 2 plants
10 inches: 1 plants
11 inches: 4 plants

15

A line plot is not bars to read off a scale — each mark is one plant. 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: 2 at 3, 2 at 4, 1 at 7, 3 at 8, 2 at 9, 1 at 10, 4 at 11.

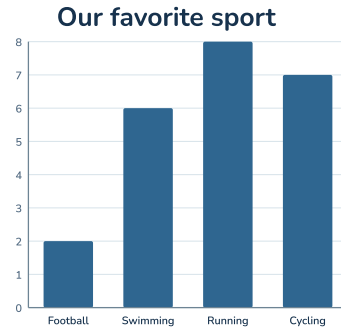
$2 + 2 + 1 + 3 + 2 + 1 + 4 = 15$ — so the answer is 15.

Solutions (17 of 17)

Line Plots and Bar Graphs (continued)

Bar graphs

4.



How many more chose running than chose football?

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

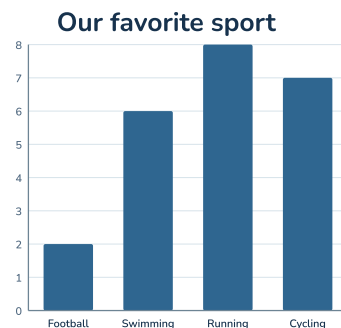
6 votes

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: Running is $8 - 2 = 6$ more than Football. So the answer is 6 votes.

5.



How many fewer chose swimming than chose running?

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

2 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: Swimming is $8 - 6 = 2$ fewer than Running. So the answer is 2 votes.