Grade 6 Math Review Workbook

7 lessons · printable · answer key at the back

Name _____ Date _____

Contents

Percents

WORKED EXAMPLE

0.2 = 20%

1. Decimals as percents

Write each decimal as a percent.

1 0.85 = ____	2 0.61 = ____	3 0.97 = ____	4 0.10 = ____
5 0.19 = ____	6 0.44 = ____	7 0.30 = ____	8 0.86 = ____
9 0.52 = ____	10 0.21 = ____	11 0.4 = ____	12 0.6 = ____
13 0.09 = ____	14 0.98 = ____	15 0.81 = ____	16 0.54 = ____
17 0.68 = ____	18 0.76 = ____	19 0.94 = ____	20 0.42 = ____
21 0.75 = ____	22 0.63 = ____	23 0.47 = ____	24 0.88 = ____
25 0.80 = ____	26 0.65 = ____	27 0.13 = ____	28 0.66 = ____
29 0.69 = ____	30 0.07 = ____	31 0.82 = ____	32 0.46 = ____
33 0.87 = ____	34 0.92 = ____	35 0.17 = ____	36 0.36 = ____
37 0.11 = ____	38 0.06 = ____	39 0.08 = ____	40 0.70 = ____
41 0.59 = ____	42 0.72 = ____	43 0.31 = ____	44 0.73 = ____
45 0.43 = ____	46 0.27 = ____	47 0.77 = ____	48 0.95 = ____
49 0.24 = ____	50 0.48 = ____		

Order of Operations

WORKED EXAMPLE

$49 \div 7 + 7 = 14$

2. Order of operations

Follow the order of operations to solve each problem.

1. $2 + 54 \div 9 =$ ____
2. $6 \times 3 + 9 =$ ____
3. $56 \div 7 + 4 =$ ____
4. $32 \div 4 + 2 =$ ____
5. $14 \div 7 + 8 =$ ____
6. $28 \div 4 + 9 =$ ____
7. $9 + 11 \times 3 =$ ____
8. $4 + 18 \div 3 =$ ____
9. $6 - 42 \div 7 =$ ____
10. $9 + 16 \div 4 =$ ____
11. $3 + 16 \div 8 =$ ____
12. $32 \div 8 + 5 =$ ____
13. $3 \times 2 + 9 =$ ____
14. $2 + 6 \times 5 =$ ____
15. $35 \div 5 + 5 =$ ____
16. $21 \div 7 + 6 =$ ____
17. $2 \times 10 + 5 =$ ____
18. $24 \div 3 + 2 =$ ____
19. $6 \times 6 + 6 =$ ____
20. $4 + 30 \div 5 =$ ____
21. $96 \div 8 + 8 =$ ____
22. $7 + 18 \div 6 =$ ____
23. $3 + 55 \div 5 =$ ____
24. $9 - 15 \div 5 =$ ____
25. $8 + 12 \times 8 =$ ____
26. $6 + 18 \div 6 =$ ____
27. $3 + 99 \div 9 =$ ____
28. $6 + 27 \div 9 =$ ____
29. $8 - 10 \div 2 =$ ____
30. $2 \times 9 + 9 =$ ____
31. $7 - 36 \div 9 =$ ____
32. $5 + 9 \times 8 =$ ____
33. $9 + 27 \div 9 =$ ____
34. $84 \div 7 + 9 =$ ____
35. $14 \div 7 + 2 =$ ____
36. $9 \times 11 + 8 =$ ____
37. $5 + 36 \div 9 =$ ____
38. $88 \div 8 + 2 =$ ____

Prime and Composite Numbers

WORKED EXAMPLE

29 **Prime** / Composite

3. Prime or composite

Circle whether each number is prime or composite.

1 24 Prime / Composite

2 50 Prime / Composite

3 20 Prime / Composite

4 6 Prime / Composite

5 49 Prime / Composite

6 44 Prime / Composite

7 34 Prime / Composite

8 4 Prime / Composite

9 5 Prime / Composite

10 9 Prime / Composite

11 32 Prime / Composite

12 26 Prime / Composite

13 46 Prime / Composite

14 47 Prime / Composite

15 18 Prime / Composite

16 7 Prime / Composite

17 10 Prime / Composite

18 21 Prime / Composite

19 12 Prime / Composite

20 40 Prime / Composite

21 30 Prime / Composite

22 37 Prime / Composite

23 3 Prime / Composite

24 14 Prime / Composite

25 36 Prime / Composite

26 25 Prime / Composite

27 23 Prime / Composite

28 16 Prime / Composite

29 17 Prime / Composite

30 33 Prime / Composite

31 28 Prime / Composite

32 22 Prime / Composite

33 13 Prime / Composite

34 39 Prime / Composite

35 8 Prime / Composite

36 11 Prime / Composite

Dividing Decimals

WORKED EXAMPLE

18.6 ÷ 3 = 6.2

4. Multiply and divide decimals

Divide. Each quotient is an exact decimal.

1 72.0 ÷ 12 = _____
2 6.54 ÷ 3 = _____
3 23.1 ÷ 7 = _____
4 102.60 ÷ 9 = _____
5 11.4 ÷ 6 = _____
6 57.5 ÷ 5 = _____
7 49.5 ÷ 11 = _____
8 48.40 ÷ 5 = _____
9 44.4 ÷ 4 = _____
10 2.8 ÷ 7 = _____
11 48.42 ÷ 6 = _____
12 58.5 ÷ 9 = _____
13 42.5 ÷ 5 = _____
14 127.20 ÷ 12 = _____
15 28.5 ÷ 5 = _____
16 50.5 ÷ 5 = _____
17 37.8 ÷ 6 = _____
18 65.76 ÷ 6 = _____
19 17.80 ÷ 5 = _____
20 28.0 ÷ 7 = _____
21 21.76 ÷ 2 = _____
22 82.6 ÷ 7 = _____
23 7.6 ÷ 2 = _____
24 67.00 ÷ 10 = _____
25 30.0 ÷ 4 = _____
26 9.8 ÷ 2 = _____
27 74.96 ÷ 8 = _____
28 13.2 ÷ 2 = _____
29 40.4 ÷ 4 = _____
30 72.24 ÷ 8 = _____
31 12.2 ÷ 2 = _____
32 19.68 ÷ 12 = _____
33 18.74 ÷ 2 = _____
34 74.8 ÷ 11 = _____
35 48.5 ÷ 5 = _____
36 24.45 ÷ 3 = _____
37 2.8 ÷ 2 = _____
38 129.58 ÷ 11 = _____
39 103.4 ÷ 11 = _____
40 18.0 ÷ 4 = _____
41 45.09 ÷ 9 = _____
42 11.52 ÷ 12 = _____
43 9.1 ÷ 7 = _____
44 17.58 ÷ 3 = _____
45 13.2 ÷ 11 = _____
46 14.04 ÷ 12 = _____
47 81.30 ÷ 10 = _____
48 4.2 ÷ 3 = _____
49 15.8 ÷ 2 = _____
50 35.63 ÷ 7 = _____

Inequalities

WORKED EXAMPLE

$4x \leq 4 \quad x \boxed{\leq} \quad 1$

5. Inequalities

Solve each one, then write >, <, ≥ or ≤ in the box.

1 $4x > 24 \quad x \boxed{} \quad 6$

2 $3x \leq 42 \quad x \boxed{} \quad 14$

3 $2x \geq 18 \quad x \boxed{} \quad 9$

4 $-3x \geq -42 \quad x \boxed{} \quad 14$

5 $-5x < -5 \quad x \boxed{} \quad 1$

6 $2x \leq 8 \quad x \boxed{} \quad 4$

7 $-2x \leq -18 \quad x \boxed{} \quad 9$

8 $-4x \geq -16 \quad x \boxed{} \quad 4$

9 $2x < 12 \quad x \boxed{} \quad 6$

10 $-6x \leq 42 \quad x \boxed{} \quad -7$

11 $2x \leq -36 \quad x \boxed{} \quad -18$

12 $6x \leq 42 \quad x \boxed{} \quad 7$

13 $-4x \geq 32 \quad x \boxed{} \quad -8$

14 $4x > -40 \quad x \boxed{} \quad -10$

15 $-6x > 42 \quad x \boxed{} \quad -7$

16 $2x < -12 \quad x \boxed{} \quad -6$

17 $-7x \geq 49 \quad x \boxed{} \quad -7$

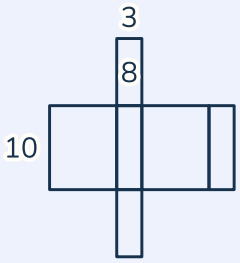
18 $2x \leq -44 \quad x \boxed{} \quad -22$

19 $3x < 24 \quad x \boxed{} \quad 8$

20 $-4x \geq -32 \quad x \boxed{} \quad 8$

Surface Area

WORKED EXAMPLE

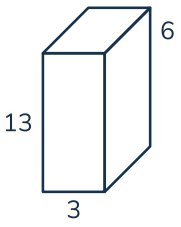


268 cm²

6. Surface area of a box

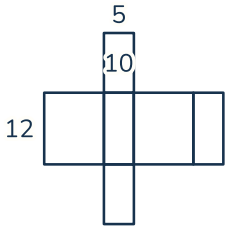
Find the surface area of each box. All lengths are in centimeters.

1



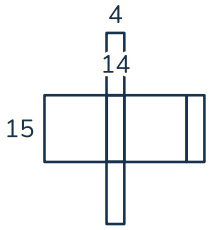
_____ cm²

2



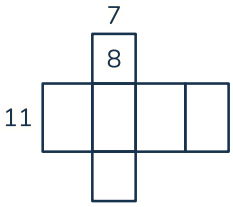
_____ cm²

3



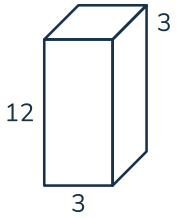
_____ cm²

4



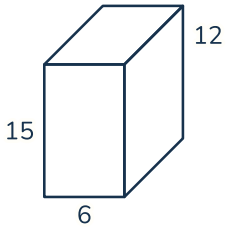
_____ cm²

5



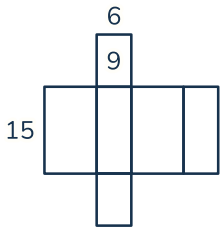
_____ cm²

6



_____ cm²

7



_____ cm²

Statistics Word Problems

WORKED EXAMPLE

In five weeks one summer, a garden grew 21, 16, 10, 6 and 10 tomatoes.

Find the median.

ANSWER: **Ordered: 6, 10, 10, 16, 21; the middle value is 10.**

7. Word problems

Read each problem. Write the answer.

1 Across five days one week, a library lent out 16, 26, 11, 16 and 9 books.

What is the median of the books?

2 In five weeks one summer, a garden grew 19, 20, 21, 18 and 19 tomatoes.

Find the range.

3 In five mornings one spring, a farm collected 19, 5, 23, 21 and 23 eggs.

Find the median.

4 Over five days at the market, a bakery sold 13, 14, 15, 19 and 14 cakes.

What was the median number of cakes?

5 Across five days at the market, a bakery sold 22, 19, 25, 22 and 7 cakes.

What is the median of the cakes?

6 Across five days at the market, a bakery sold 20, 5, 15, 15 and 7 cakes.

What is the median of the cakes?

7. Word problems (continued)

Read each problem. Write the answer.

7 In five weeks during a school drive, a class recycled 16, 21, 28, 13 and 21 bottles.

Find the median.

_____

8 In five days one holiday, a shop sold 12, 10, 9, 21 and 9 kites.

Find the median.

_____

9 Over five days at the market, a bakery sold 16, 4, 20, 20 and 27 cakes.

What was the median number of cakes?

_____

10 In five days one holiday, a shop sold 10, 19, 10, 15 and 23 kites.

Find the median.

_____

11 Over five weeks one summer, a garden grew 18, 25, 18, 14 and 6 tomatoes.

What was the median number of tomatoes?

_____

12 Across five days one holiday, a shop sold 15, 24, 25, 23 and 15 kites.

What is the median of the kites?

_____

Answer Key (1 of 3)

Percents

Decimals as percents

1. 0.85 = 85%
2. 0.61 = 61%
3. 0.97 = 97%
4. 0.10 = 10%
5. 0.19 = 19%
6. 0.44 = 44%
7. 0.30 = 30%
8. 0.86 = 86%
9. 0.52 = 52%
10. 0.21 = 21%
11. 0.4 = 40%
12. 0.6 = 60%
13. 0.09 = 9%
14. 0.98 = 98%
15. 0.81 = 81%
16. 0.54 = 54%
17. 0.68 = 68%
18. 0.76 = 76%
19. 0.94 = 94%
20. 0.42 = 42%
21. 0.75 = 75%
22. 0.63 = 63%
23. 0.47 = 47%
24. 0.88 = 88%
25. 0.80 = 80%
26. 0.65 = 65%
27. 0.13 = 13%
28. 0.66 = 66%
29. 0.69 = 69%
30. 0.07 = 7%
31. 0.82 = 82%
32. 0.46 = 46%
33. 0.87 = 87%
34. 0.92 = 92%
35. 0.17 = 17%
36. 0.36 = 36%
37. 0.11 = 11%
38. 0.06 = 6%
39. 0.08 = 8%
40. 0.70 = 70%
41. 0.59 = 59%
42. 0.72 = 72%
43. 0.31 = 31%
44. 0.73 = 73%
45. 0.43 = 43%

Percents (continued)

Decimals as percents (continued)

46. 0.27 = 27%
47. 0.77 = 77%
48. 0.95 = 95%
49. 0.24 = 24%
50. 0.48 = 48%

Order of Operations

Order of operations

1. 2 + 54 ÷ 9 = 8
2. 6 × 3 + 9 = 27
3. 56 ÷ 7 + 4 = 12
4. 32 ÷ 4 + 2 = 10
5. 14 ÷ 7 + 8 = 10
6. 28 ÷ 4 + 9 = 16
7. 9 + 11 × 3 = 42
8. 4 + 18 ÷ 3 = 10
9. 6 − 42 ÷ 7 = 0
10. 9 + 16 ÷ 4 = 13
11. 3 + 16 ÷ 8 = 5
12. 32 ÷ 8 + 5 = 9
13. 3 × 2 + 9 = 15
14. 2 + 6 × 5 = 32
15. 35 ÷ 5 + 5 = 12
16. 21 ÷ 7 + 6 = 9
17. 2 × 10 + 5 = 25
18. 24 ÷ 3 + 2 = 10
19. 6 × 6 + 6 = 42
20. 4 + 30 ÷ 5 = 10
21. 96 ÷ 8 + 8 = 20
22. 7 + 18 ÷ 6 = 10
23. 3 + 55 ÷ 5 = 14
24. 9 − 15 ÷ 5 = 6
25. 8 + 12 × 8 = 104
26. 6 + 18 ÷ 6 = 9
27. 3 + 99 ÷ 9 = 14
28. 6 + 27 ÷ 9 = 9
29. 8 − 10 ÷ 2 = 3
30. 2 × 9 + 9 = 27
31. 7 − 36 ÷ 9 = 3
32. 5 + 9 × 8 = 77
33. 9 + 27 ÷ 9 = 12
34. 84 ÷ 7 + 9 = 21
35. 14 ÷ 7 + 2 = 4
36. 9 × 11 + 8 = 107
37. 5 + 36 ÷ 9 = 9

Answer Key (2 of 3)

Order of Operations (continued)

Order of operations (continued)

38. 88 ÷ 8 + 2 = 13

Prime and Composite Numbers

Prime or composite

1. 24 → Composite (2 × 12)
2. 50 → Composite (2 × 25)
3. 20 → Composite (2 × 10)
4. 6 → Composite (2 × 3)
5. 49 → Composite (7 × 7)
6. 44 → Composite (2 × 22)
7. 34 → Composite (2 × 17)
8. 4 → Composite (2 × 2)
9. 5 → Prime
10. 9 → Composite (3 × 3)
11. 32 → Composite (2 × 16)
12. 26 → Composite (2 × 13)
13. 46 → Composite (2 × 23)
14. 47 → Prime
15. 18 → Composite (2 × 9)
16. 7 → Prime
17. 10 → Composite (2 × 5)
18. 21 → Composite (3 × 7)
19. 12 → Composite (2 × 6)
20. 40 → Composite (2 × 20)
21. 30 → Composite (2 × 15)
22. 37 → Prime
23. 3 → Prime
24. 14 → Composite (2 × 7)
25. 36 → Composite (2 × 18)
26. 25 → Composite (5 × 5)
27. 23 → Prime
28. 16 → Composite (2 × 8)
29. 17 → Prime
30. 33 → Composite (3 × 11)
31. 28 → Composite (2 × 14)
32. 22 → Composite (2 × 11)
33. 13 → Prime
34. 39 → Composite (3 × 13)
35. 8 → Composite (2 × 4)
36. 11 → Prime

Dividing Decimals

Multiply and divide decimals

1. 72.0 ÷ 12 = 6.0
2. 6.54 ÷ 3 = 2.18

Dividing Decimals (continued)

Multiply and divide decimals (continued)

3. 23.1 ÷ 7 = 3.3
4. 102.60 ÷ 9 = 11.40
5. 11.4 ÷ 6 = 1.9
6. 57.5 ÷ 5 = 11.5
7. 49.5 ÷ 11 = 4.5
8. 48.40 ÷ 5 = 9.68
9. 44.4 ÷ 4 = 11.1
10. 2.8 ÷ 7 = 0.4
11. 48.42 ÷ 6 = 8.07
12. 58.5 ÷ 9 = 6.5
13. 42.5 ÷ 5 = 8.5
14. 127.20 ÷ 12 = 10.60
15. 28.5 ÷ 5 = 5.7
16. 50.5 ÷ 5 = 10.1
17. 37.8 ÷ 6 = 6.3
18. 65.76 ÷ 6 = 10.96
19. 17.80 ÷ 5 = 3.56
20. 28.0 ÷ 7 = 4.0
21. 21.76 ÷ 2 = 10.88
22. 82.6 ÷ 7 = 11.8
23. 7.6 ÷ 2 = 3.8
24. 67.00 ÷ 10 = 6.70
25. 30.0 ÷ 4 = 7.5
26. 9.8 ÷ 2 = 4.9
27. 74.96 ÷ 8 = 9.37
28. 13.2 ÷ 2 = 6.6
29. 40.4 ÷ 4 = 10.1
30. 72.24 ÷ 8 = 9.03
31. 12.2 ÷ 2 = 6.1
32. 19.68 ÷ 12 = 1.64
33. 18.74 ÷ 2 = 9.37
34. 74.8 ÷ 11 = 6.8
35. 48.5 ÷ 5 = 9.7
36. 24.45 ÷ 3 = 8.15
37. 2.8 ÷ 2 = 1.4
38. 129.58 ÷ 11 = 11.78
39. 103.4 ÷ 11 = 9.4
40. 18.0 ÷ 4 = 4.5
41. 45.09 ÷ 9 = 5.01
42. 11.52 ÷ 12 = 0.96
43. 9.1 ÷ 7 = 1.3
44. 17.58 ÷ 3 = 5.86
45. 13.2 ÷ 11 = 1.2
46. 14.04 ÷ 12 = 1.17
47. 81.30 ÷ 10 = 8.13

Answer Key (3 of 3)

Dividing Decimals (continued)

Multiply and divide decimals (continued)

48. 4.2 ÷ 3 = 1.4
49. 15.8 ÷ 2 = 7.9
50. 35.63 ÷ 7 = 5.09

Inequalities

Inequalities

1. $4x > 24 \rightarrow x > 6$
2. $3x \leq 42 \rightarrow x \leq 14$
3. $2x \geq 18 \rightarrow x \geq 9$
4. $-3x \geq -42 \rightarrow x \leq 14$
5. $-5x < -5 \rightarrow x > 1$
6. $2x \leq 8 \rightarrow x \leq 4$
7. $-2x \leq -18 \rightarrow x \geq 9$
8. $-4x \geq -16 \rightarrow x \leq 4$
9. $2x < 12 \rightarrow x < 6$
10. $-6x \leq 42 \rightarrow x \geq -7$
11. $2x \leq -36 \rightarrow x \leq -18$
12. $6x \leq 42 \rightarrow x \leq 7$
13. $-4x \geq 32 \rightarrow x \leq -8$
14. $4x > -40 \rightarrow x > -10$
15. $-6x > 42 \rightarrow x < -7$
16. $2x < -12 \rightarrow x < -6$
17. $-7x \geq 49 \rightarrow x \leq -7$
18. $2x \leq -44 \rightarrow x \leq -22$
19. $3x < 24 \rightarrow x < 8$
20. $-4x \geq -32 \rightarrow x \leq 8$

Surface Area

Surface area of a box

1. $3\times6\times13 \rightarrow 2(18 + 39 + 78)$: 270 cm²
2. $5\times10\times12 \rightarrow 2(50 + 60 + 120)$: 460 cm²
3. $4\times14\times15 \rightarrow 2(56 + 60 + 210)$: 652 cm²
4. $7\times8\times11 \rightarrow 2(56 + 77 + 88)$: 442 cm²
5. $3\times3\times12 \rightarrow 2(9 + 36 + 36)$: 162 cm²
6. $6\times12\times15 \rightarrow 2(72 + 90 + 180)$: 684 cm²
7. $6\times9\times15 \rightarrow 2(54 + 90 + 135)$: 558 cm²

Statistics Word Problems

Word problems

1. Ordered: 9, 11, 16, 16, 26; the middle value is 16.
2. 21 − 18 = 3.
3. Ordered: 5, 19, 21, 23, 23; the middle value is 21.
4. Ordered: 13, 14, 14, 15, 19; the middle value is 14.
5. Ordered: 7, 19, 22, 22, 25; the middle value is 22.

Statistics Word Problems (continued)

Word problems (continued)

6. Ordered: 5, 7, 15, 15, 20; the middle value is 15.
7. Ordered: 13, 16, 21, 21, 28; the middle value is 21.
8. Ordered: 9, 9, 10, 12, 21; the middle value is 10.
9. Ordered: 4, 16, 20, 20, 27; the middle value is 20.
10. Ordered: 10, 10, 15, 19, 23; the middle value is 15.
11. Ordered: 6, 14, 18, 18, 25; the middle value is 18.
12. Ordered: 15, 15, 23, 24, 25; the middle value is 23.

Solutions (1 of 5)

Percents

Decimals as percents

1. **0.85 = ____**

0.85 = **85/100**

85%

Percent means "out of a hundred", so the question is really: how many hundredths is 0.85? It is 85 of them.

85 out of a hundred is written 85%.

2. **0.61 = ____**

0.61 = **61/100**

61%

Percent means "out of a hundred", so the question is really: how many hundredths is 0.61? It is 61 of them.

61 out of a hundred is written 61%.

Order of Operations

Order of operations

1. **2 + 54 ÷ 9 = ___**

2 + **54** ÷ **9**

2 + **6**

8

× and ÷ come before + and –, so this goes first. 54 ÷ 9 = 6.

Only + and – are left, so work from left to right. 2 + 6 = 8.

Nothing is left to work out, so the answer is 8.

2. **6 × 3 + 9 = ___**

6 × **3** + 9

18 + **9**

27

× and ÷ come before + and –, so this goes first. 6 × 3 = 18.

Only + and – are left, so work from left to right. 18 + 9 = 27.

Nothing is left to work out, so the answer is 27.

Solutions (2 of 5)

Prime and Composite Numbers

Prime or composite

1. **24** **Prime** / **Composite**

tried: **2**

24 ÷ 2 = **12**

A prime has exactly two factors: 1 and itself. So the question is whether anything ELSE divides into 24.

You do not have to try everything up to 24. Factors come in pairs, so if one were bigger than 4 its partner would be smaller — and you would have found that one first. Testing up to 4 is enough.

2 goes into 24 exactly (24 ÷ 2 = 12), and that is one factor too many. 24 is composite — no need to test any further.

2. **50** **Prime** / **Composite**

tried: **2**

50 ÷ 2 = **25**

A prime has exactly two factors: 1 and itself. So the question is whether anything ELSE divides into 50.

You do not have to try everything up to 50. Factors come in pairs, so if one were bigger than 7 its partner would be smaller — and you would have found that one first. Testing up to 7 is enough.

2 goes into 50 exactly (50 ÷ 2 = 25), and that is one factor too many. 50 is composite — no need to test any further.

Dividing Decimals

Multiply and divide decimals

1. **72.0 ÷ 12 = ____**

72.0 ÷ **12**

72.0 ÷ 12 = **6.0**

6.0 × 12 = **72.0**

The number you are dividing by is already whole, so there is nothing to move: divide as usual and the point in the answer comes straight down.

Now divide: 72.0 ÷ 12 = 6.0.

Check it the other way round: 6.0 × 12 should give 72.0 back. A point in the wrong place fails this instantly — 72.0 and a tenth of it are not close.

Solutions (3 of 5)

Dividing Decimals (continued)

Multiply and divide decimals (continued)

2. **6.54 ÷ 3 = _____**

	6.54	÷	**3**	
6.54	÷	3	=	**2.18**
2.18	×	3	=	**6.54**

The number you are dividing by is already whole, so there is nothing to move: divide as usual and the point in the answer comes straight down.

Now divide: 6.54 ÷ 3 = 2.18.

Check it the other way round: 2.18 × 3 should give 6.54 back. A point in the wrong place fails this instantly — 6.54 and a tenth of it are not close.

Inequalities

Inequalities

1. **4x > 24 x ☐ 6**

x	**>**	6

An inequality comes apart exactly like an equation — the same moves, done to both sides. There is one extra rule and it arrives at the end, so start by ignoring the sign and solving for x.

Now divide both sides by 4: 24 ÷ 4 = 6.

Nothing was divided by a negative here, so the sign has not moved: it is still >. That is the one thing to check on every one of these before writing the answer down.

So x > 6. That is a whole RANGE of numbers rather than one, which is what makes this different from an equation — and why the sign is half the answer.

Solutions (4 of 5)

Inequalities (continued)

Inequalities (continued)

2. $3x \leq 42$ x ☐ 14

$x \leq 14$

An inequality comes apart exactly like an equation — the same moves, done to both sides. There is one extra rule and it arrives at the end, so start by ignoring the sign and solving for x.

Now divide both sides by 3: $42 \div 3 = 14$.

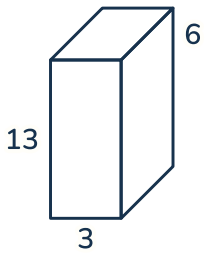
Nothing was divided by a negative here, so the sign has not moved: it is still ≤. That is the one thing to check on every one of these before writing the answer down.

So $x \leq 14$. That is a whole RANGE of numbers rather than one, which is what makes this different from an equation — and why the sign is half the answer.

Surface Area

Surface area of a box

1.



____ cm²

front and back:	$2 \times 3 \times 13 =$	78
the two sides:	$2 \times 6 \times 13 =$	156
top and bottom:	$2 \times 3 \times 6 =$	36
total:		270

Six faces, and the drawing can only show you three of them. The three you cannot see are the reason the usual wrong answer here is five faces added perfectly.

Front and back are 3 by 13, and they are identical — so that pair is $2 \times 3 \times 13 = 78$.

The two sides are 6 by 13, and they are identical — so that pair is $2 \times 6 \times 13 = 156$.

Top and bottom are 3 by 6, and they are identical — so that pair is $2 \times 3 \times 6 = 36$.

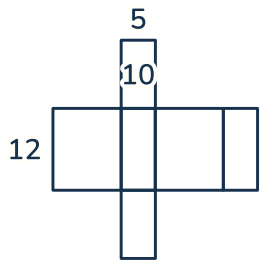
Three pairs, six faces, none missed: 78 + 156 + 36 = 270 square cm.

Solutions (5 of 5)

Surface Area (continued)

Surface area of a box (continued)

2.



____ cm²

front and back:	2 × 5 × 12 =	120
the two sides:	2 × 10 × 12 =	240
top and bottom:	2 × 5 × 10 =	100
total:		**460**

A net lays all six faces out flat, so none of them is hidden — which is the whole reason a net is easier than the solid. They still come in three PAIRS.

Front and back are 5 by 12, and they are identical — so that pair is 2 × 5 × 12 = 120.

The two sides are 10 by 12, and they are identical — so that pair is 2 × 10 × 12 = 240.

Top and bottom are 5 by 10, and they are identical — so that pair is 2 × 5 × 10 = 100.

Three pairs, six faces, none missed: 120 + 240 + 100 = 460 square cm.