Answer Keys - Grade 7 Mathematics Worksheets

Answer Key: Add and Subtract Decimals

Section A: Basic Addition and Subtraction

1. 23.4 + 15.7 = **39.1**
2. 67.89 + 23.4 = **91.29**
3. 156.7 - 89.3 = **67.4**
4. 45.67 - 28.9 = **16.77**
5. 123.456 + 67.89 = **191.346**
6. 234.5 - 167.89 = **66.61**
7. 89.7 + 123.45 + 67.8 = **280.95**
8. 456.78 - 289.456 = **167.324**
9. 12.345 + 67.8 + 123.45 = **203.595**
10. 789.4 - 456.789 = **332.611**

Section B: Mixed Operations

11. 45.6 + 23.78 - 12.9 = **56.48**
12. 123.4 - 67.89 + 45.6 = **101.11**
13. 234.56 + 78.9 - 156.78 = **156.68**
14. 67.8 - 23.456 + 89.7 = **134.044**
15. 345.67 + 123.4 - 234.56 + 67.8 = **302.31**
16. 456.7 - 234.89 + 123.45 - 67.8 = **277.46**

17. 789.45 + 123.6 - 456.78 + 234.5 = **690.77**

18. 234.5 - 123.67 + 456.8 - 234.56 = **333.07**

Section C: Word Problems

19. £12.45 + £3.67 + £5.89 = **£22.01**

20. £145.67 + £23.45 - £67.89 = **£101.23**

21. 2.5 + 1.75 + 0.85 = **4.1 kg**

22. 3.7 + 4.85 + 2.95 = **11.5 km**

23. £1,250.50 - £345.67 - £234.89 - £156.75 = **£513.19**

24. 45.67 + 23.8 - 12.45 = **57.02 mL**

Section D: Problem Solving Challenges

25. 23.4 + **8.23** - 12.67 = 18.9

26. Estimate: **Greater than 100** (34 + 29 + 31 + 7 = 101 approximately)

27. 2.75 + 3.2 + 2.95 - 1.85 = **7.05 kg**

28. **22.1, 25.3** (adding 3.2 each time)

29. £2.45 + £1.67 + £3.89 = £8.01. **Yes, he has enough. Change = £0.76**

30. 156.7 - 34.85 - 23.9 - 45.67 = **52.28 cm**

Answer Key: Map Scale

Section A: Understanding Scale

1. 1 cm = **50,000 cm** = **500 m** = **0.5 km**

2. **1:25,000** shows more detail (smaller scale number = more detail)

3. 1 cm : 2 km = **1:200,000**; 1 cm : 500 m = **1:50,000**; 2 cm : 1 km = **1:50,000**

Section B: Map Distance to Real Distance

4. 5 × 20,000 = **100,000 cm = 1,000 m**

5. 3.5 × 50,000 = 175,000 cm = **1.75 km**

6. 8 × 25,000 = **200,000 cm = 2,000 m**

7. 2.4 × 100,000 = 240,000 cm = **2.4 km**

8. 12.5 × 10,000 = **125,000 cm = 1,250 m**

9. 6.8 × 75,000 = 510,000 cm = **5.1 km**

10. 4.5 × 200,000 = 900,000 cm = **9 km**

11. 9.2 × 15,000 = **138,000 cm = 1,380 m**

Section C: Real Distance to Map Distance

12. 1.5 km = 150,000 cm ÷ 30,000 = **5 cm**

13. 800 m = 80,000 cm ÷ 40,000 = **2 cm**

14. 2.5 km = 250,000 cm ÷ 25,000 = **10 cm**

15. 1,200 m = 120,000 cm ÷ 60,000 = **2 cm**

16. 3.2 km = 320,000 cm ÷ 80,000 = **4 cm**

17. 750 m = 75,000 cm ÷ 50,000 = **1.5 cm**

18. 1.75 km = 175,000 cm ÷ 35,000 = **5 cm**

19. 900 m = 90,000 cm ÷ 45,000 = **2 cm**

Section D: Scale Drawing Problems

20. 24 m = 2,400 cm ÷ 200 = **12 cm**

21. 8 cm × 500 = 4,000 cm = **40 m**; 6 cm × 500 = 3,000 cm = **30 m**

22. 4.8 m = 480 cm ÷ 32 = **15 cm**

23. 5.5 m ÷ 100 = **5.5 cm**; 4.2 m ÷ 100 = **4.2 cm**

Section E: Real-World Applications

24. 14 × 25,000 = 350,000 cm = **3.5 km**; Time = 3.5 ÷ 4 = **52 minutes 30 seconds**

25. 23 × 10,000 = 230,000 cm = **2.3 km**; Cost = 2.3 × £50,000 = **£115,000**

26. (15 + 8) × 2,000 = 23 × 2,000 = **46,000 cm = 460 m**

27. Real distance = 6 × 50,000 = 300,000 cm; On Map 2: 300,000 ÷ 100,000 = **3 cm**

28. Scale 1:5,000: 150m = 15,000cm ÷ 5,000 = **3 cm**; 80m = 8,000cm ÷ 5,000 = **1.6 cm** Scale 1:2,000: 15,000 ÷ 2,000 = **7.5 cm**; 8,000 ÷ 2,000 = **4 cm**

Answer Key: Ratio and Direct Proportion

Section A: Simplifying Ratios

1. 12 : 18 = **2 : 3**

2. 15 : 25 = **3 : 5**

3. 24 : 36 : 48 = **2 : 3 : 4**

4. 20 : 35 = **4 : 7**

5. 16 : 24 : 32 = **2 : 3 : 4**

6. 45 : 60 = **3 : 4**

7. 21 : 28 : 35 = **3 : 4 : 5**

8. 72 : 108 = **2 : 3**

Section B: Equivalent Ratios

9. 3 : 5 = 12 : **20**

10. 2 : 7 = **6** : 21

11. 4 : 9 = 20 : **45**

12. 5 : 8 = **20** : 32

13. 6 : 11 = 18 : **33**

14. 7 : 10 = **35** : 50

Section C: Sharing in Given Ratios

15. Total parts = 8; £240 ÷ 8 = £30; **£90 : £150**

16. Total parts = 12; 72 ÷ 12 = 6; **30 : 42**

17. Total parts = 10; 150 ÷ 10 = 15; **30 cm : 45 cm : 75 cm**

18. Total parts = 14; £420 ÷ 14 = £30; **£120 : £90 : £210**

19. Total parts = 8; 96 ÷ 8 = 12; **60 : 36**

20. Total parts = 14; 210 ÷ 14 = 15; **30 min : 45 min : 60 min : 75 min**

21. Total parts = 12; 180 ÷ 12 = 15; **105 kg : 75 kg**

22. Total parts = 15; £675 ÷ 15 = £45; **£135 : £180 : £360**

23. Total parts = 9; 144 ÷ 9 = 16; **16 : 48 : 80**

24. Total parts = 7; 280 ÷ 7 = 40; **120 ml : 160 ml**

Section D: Direct Proportion

25. £3 ÷ 5 × 8 = **£4.80**

26. 2.4 ÷ 12 × 20 = **4 kg**

27. 6 × 15 ÷ 10 = **9 days**

28. £18 ÷ 4 × 7 = **£31.50**

29. 2.7 ÷ 9 × 15 = **4.5 kg**

30. 120 ÷ 8 × 195 ÷ 120 = **13 tins**

31. $60 ÷ £45 × £75 = **$100**

32. 180 ÷ 2.5 × 4 = **288 km**

Section E: Real-World Applications

33. **Flour: 450g, Sugar: 300g, Butter: 225g**

34. **Red paint: 12 litres, Total: 20 litres**

35. Total parts = 9; Boys: 4 × 80 = **320**; Girls: 5 × 80 = **400**

36. **Distance: 750 km, Time: 4 hours**

37. **$119, €72, £150**

38. Total parts = 9; **£4,000 : £6,000 : £8,000**

39. **1:250,000, Real distance: 30 km**

40. **Brazilian: 16 kg, Ethiopian: 8 kg, Total: 48 kg**

Teaching Notes

Common Mistakes to Watch For:

- **Decimals**: Not aligning decimal points, forgetting to include zeros as placeholders
- **Scale**: Confusing map distance with real distance, forgetting to convert units
- **Ratios**: Not simplifying to lowest terms, incorrect calculation of total parts

Extension Activities:

- Create your own decimal word problems using real prices
- Design a scale drawing of your classroom
- Research ratios in cooking recipes from different countries

Assessment Criteria:

- **Excellent (36-40 marks)**: Confident with all concepts, accurate calculations
- **Good (30-35 marks)**: Mostly accurate with minor errors
- **Satisfactory (24-29 marks)**: Basic understanding, some calculation errors
- **Needs Support (<24 marks)**: Requires additional practice and support