

Pack B • Fluency

Answer all questions. Show your working. Questions are grouped by challenge level.

BRONZE

Questions 1–10

1. Write three different decimals between 1.5 and 1.6. Justify that each one lies in that range.

2. Round 7.849 to 1 decimal place and name the digit that decided the rounding. Justify.

3. The sum $6.48 + 3.76$ should equal 10.24. A student writes 9.124. What error did they make? Give the correct answer.

4. A pencil is 24.5 cm long. Express its length in mm AND in m, then explain the relationship between the units.

5. A recipe needs 2.39 g of flour. The cook has 7.04 g. How much flour is left over? Show your calculation with decimal points aligned.

6. Find 3.5×4 in two different ways: (i) directly, (ii) by treating 3.5 as a whole number, then adjusting. Show both methods give the same answer.

7. Without fully dividing, decide: will $7.5 \div 5$ be greater or less than 2? Then calculate to check.

8. Convert 3.8 cm to mm AND state what operation you performed and why.

9. Convert 6250 g to kg AND explain why you divide (not multiply) to convert g to kg.

10. A rectangle has perimeter 13.8 cm. Give two different pairs of whole-number or one-decimal-place side lengths that could produce this perimeter. Justify each.

11. Round 3.4251 to 2 decimal places.

12. Calculate $15.36 + 7.48 + 4.19$.

13. Calculate $30.50 - 14.78$.

14. Calculate 4.2×3.5 .

15. Calculate $22.4 \div 1.6$.

16. Convert 4.08 m into (a) cm and (b) mm.

17. A rectangle has area 28.8 cm^2 and width 4.5 cm. Find its length.

18. A journey starts at 11:20 am and takes 3 hours and 55 minutes. What time does it finish?

19. Convert 3.072 kg to g.

20. Shop A sells juice at £0.85 per bottle. Shop B sells the same juice in packs of 4 for £3.08. Which is better value? Show your working.

21. Substitute $x = 2.5$ into $3x + 2$.
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22. Estimate 6.94×2.8 by rounding each factor to 1 decimal place, then calculate the exact answer.
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23. A road is 1.7 km long. A second road is 640 m long. What is the total length in metres?
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24. A rectangle has perimeter 31.2 cm. Its width is 4.8 cm. Find its length.
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25. Work out $(2.4)^2 + 1.8 \times 3$.
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26. Work out $-8.4 + 5.6$.
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27. Solve $5x = 7.2$.
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28. A train journey takes 2 hours and 20 minutes. How many seconds is that in total?
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29. A rectangle has length 7.6 cm and width 3.8 cm. Find its area and its perimeter.
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30. A square has side 6.3 cm. Find its area. Then evaluate $\sqrt{\text{area}}$ and comment on the result.
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31. A rectangle has perimeter 25.2 cm. Its length is $(2x + 1.2)$ cm and its width is x cm. Find x and calculate the area.
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32. Substitute $t = 4.0$ into $\frac{t^2 - a}{t + b}$. Give your answer as a decimal.
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33. The temperature rises from -3.5°C to 5.5°C over 5 hours. Find the rise and the rate of change in $^\circ\text{C}$ per hour.
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34. Write 225 as a product of prime factors in index form, then find $\sqrt{n}$.
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35. Simplify $7x + 4.8 - 3x + 2.4$, then evaluate it for $x = 1.5$.
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36. How many pieces of ribbon each 0.45 m long can be cut from a roll of 7.2 m? How much is left over? Give the leftover in cm.
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37. The HCF of two numbers is 4 and their LCM is 60. One number is 12. Find the other.
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38. Work out $\frac{a \times (15 - 3^2)}{d}$. Give your answer as a decimal.
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39. A tank holds 24.0 litres. Water drains at 3.2 litres/min and is added at 0.8 litres/min simultaneously. How long until the tank is empty?
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40. A farmer's field is a rectangle. Its perimeter is 720 m. The length is 2 times the width. Find the area in m^2 , then convert to hectares ($1 \text{ ha} = 10\,000 \text{ m}^2$).
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