

Pack A • Fluency

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

BRONZE

Questions 1–10

1. Write three different decimals between 0.3 and 0.4. Justify that each one lies in that range.

2. Round 4.372 to 1 decimal place and name the digit that decided the rounding. Justify.

3. The sum $4.37 + 2.85$ should equal 7.22. A student writes 6.122. What error did they make? Give the correct answer.

4. A pencil is 18 cm long. Express its length in mm AND in m, then explain the relationship between the units.

5. A recipe needs 3.67 g of flour. The cook has 8.52 g. How much flour is left over? Show your calculation with decimal points aligned.

6. Find 2.4×3 in two different ways: (i) directly, (ii) by treating 2.4 as a whole number, then adjusting. Show both methods give the same answer.

7. Without fully dividing, decide: will $8.4 \div 4$ be greater or less than 2? Then calculate to check.

8. Convert 4.7 cm to mm AND state what operation you performed and why.

9. Convert 3500 g to kg AND explain why you divide (not multiply) to convert g to kg.

10. A rectangle has perimeter 9.4 cm. Give two different pairs of whole-number or one-decimal-place side lengths that could produce this perimeter. Justify each.

11. Round 5.6847 to 2 decimal places.

12. Calculate $12.47 + 8.65 + 3.28$.

13. Calculate $20.30 - 8.67$.

14. Calculate 3.4×2.5 .

15. Calculate $15.6 \div 1.2$.

16. Convert 2.35 m into (a) cm and (b) mm.

17. A rectangle has area 22.4 cm^2 and width 3.2 cm. Find its length.

18. A journey starts at 9:45 am and takes 2 hours and 35 minutes. What time does it finish?

19. Convert 2.45 kg to g.

20. Shop A sells juice at £1.20 per bottle. Shop B sells the same juice in packs of 3 for £3.24. Which is better value? Show your working.

21. Substitute $x = 1.4$ into $3x + 2$.
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22. Estimate 4.87×3.2 by rounding each factor to 1 decimal place, then calculate the exact answer.
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23. A road is 2.4 km long. A second road is 850 m long. What is the total length in metres?
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24. A rectangle has perimeter 24.6 cm. Its width is 3.4 cm. Find its length.
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25. Work out $(1.5)^2 + 3.2 \times 4$.
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26. Work out $-3.5 + 7.2$.
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27. Solve $5x = 8.5$.
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28. A train journey takes 1 hours and 45 minutes. How many seconds is that in total?
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29. A rectangle has length 8.5 cm and width 4.2 cm. Find its area and its perimeter.
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30. A square has side 4.5 cm. Find its area. Then evaluate $\sqrt{\text{area}}$ and comment on the result.
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31. A rectangle has perimeter 20.4 cm. Its length is $(2x + 0.6)$ cm and its width is x cm. Find x and calculate the area.
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32. Substitute $t = 3.0$ into $\frac{t^2 - a}{t + b}$. Give your answer as a decimal.
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33. The temperature rises from -6.4°C to 2.8°C over 4 hours. Find the rise and the rate of change in $^\circ\text{C}$ per hour.
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34. Write 196 as a product of prime factors in index form, then find $\sqrt{n}$.
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35. Simplify $5x + 3.2 - 2x + 1.7$, then evaluate it for $x = 0.5$.
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36. How many pieces of ribbon each 0.35 m long can be cut from a roll of 5.0 m? How much is left over? Give the leftover in cm.
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37. The HCF of two numbers is 6 and their LCM is 90. One number is 18. Find the other.
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38. Work out $\frac{a \times (10 - 2^2)}{d}$. Give your answer as a decimal.
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39. A tank holds 18.0 litres. Water drains at 2.5 litres/min and is added at 1.0 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 960 m. The length is 3 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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