

MATH · Y5

# Year 5 Reasoning Pack

30 mixed-topic problems

## Set 1: Fluency

1. What is  $23,456 + 17,892$ ?
2. What is  $34 \times 7$ ?
3. What is  $0.6 + 0.45$ ?
4. Find  $\frac{3}{4}$  of 120.
5. What is 25% of 80?
6. Convert 350cm to metres.
7. What is  $6.7 \times 10$ ?
8. Find the area of a rectangle 8cm by 5cm.
9. What is  $1.25 \times 4$ ?
10. Round 3.567 to 1 decimal place.

## Set 2: Reasoning

1. Tom says 0.6 is bigger than 0.59. Is he right? Why?
2. Sam says  $\frac{1}{3}$  of 90 = 30%. Is he confused? Explain.
3. Which is bigger:  $\frac{3}{4}$  or 0.7? Explain.
4. A square has perimeter 28cm. What is its area?
5. A shape has 4 lines of symmetry. What could it be?



6. 6. The answer is 1.5. Write three different additions that give 1.5.
7. 7. Maya says 'multiplying always makes a number bigger'. Give a counterexample.
8. 8. How many times bigger is 24,000 than 240?
9. 9. Which is the better discount: 25% off £80, or  $\frac{1}{3}$  off £75?
10. 10. A rectangle has area  $24\text{cm}^2$  and one side is 4cm. What is the perimeter?

### Set 3: Problem solving

1. 1. A school has 540 children.  $\frac{3}{5}$  are in KS2. How many are in KS1?
2. 2. A cake costs £4.50. A drink costs  $\frac{2}{3}$  of that. How much for cake + drink?
3. 3. A water bill is £85 a quarter. The water company offers 15% off if paid yearly. How much saved per year?
4. 4. A garden is rectangular, 12m by 8m. A path 1m wide goes around the inside edge. What area is the path?
5. 5. A train leaves Manchester at 09:42 and arrives in London at 12:18. How long was the journey?
6. 6. Sam runs 800m in 4 minutes. At the same pace, how long would 1.2km take?
7. 7. A class has 30 children. 40% wear glasses. Of those who don't wear glasses, half wear hats. How many wear hats but not glasses?
8. 8. A book has 240 pages. Sam reads  $\frac{3}{4}$  of it. He then reads  $\frac{1}{3}$  of what's left. How many pages still to go?
9. 9. A 1.5 litre bottle of juice is poured into 250ml glasses. How many glasses can be filled?
10. 10. A school orders 8 boxes of pens at £6.50 each. They get 10% off the total. How much do they pay?

### Answer key

Set 1: 1. 41,348 2. 238 3. 1.05 4. 90 5. 20 6. 3.5m 7. 67 8.  $40\text{cm}^2$  9. 5 10. 3.6

Set 2: 1. Yes —  $0.60 > 0.59$  because  $60 > 59$  in the hundredths place. 2. He's confused —  $\frac{1}{3}$  of  $90 = 30$  (a number), not 30%. 3.  $\frac{3}{4} = 0.75$  which is  $> 0.7$ . 4. Side =  $28 \div 4 = 7\text{cm}$ ; area =  $49\text{cm}^2$ . 5. A square has 4 lines of symmetry. 6. e.g.  $0.5+1$ ,  $0.75+0.75$ ,  $1.25+0.25$ . 7.  $5 \times 0.5 = 2.5$  (smaller than 5). Or any  $\times$  by a number  $< 1$ . 8. 100 times bigger. 9. 25% off £80 = £20 off;  $\frac{1}{3}$  off £75 = £25 off. Second is bigger. 10.



Other side 6cm, perimeter 20cm.

Set 3: 1. 216 in KS1 ( $\frac{2}{5}$  of 540). 2.  $\pounds 4.50 + \pounds 3 = \pounds 7.50$ . 3. Yearly =  $\pounds 340$ ; 15% off =  $\pounds 51$  saved. 4. Outer  $96\text{m}^2$ , inner ( $10 \times 6$ ) =  $60\text{m}^2$ , path =  $36\text{m}^2$ . 5. 2h 36m. 6. 6 minutes (1.2km is 1.5 $\times$  longer). 7. 9 children (60% don't wear glasses = 18, half = 9). 8. 40 pages left (180 read first; 60 left;  $\frac{1}{3}$  of 60 = 20 read; 40 to go). 9. 6 glasses ( $1500 \div 250$ ). 10.  $\pounds 46.80$  ( $\pounds 52 - \pounds 5.20$ ).

