Planner

Checking

- Spotting incorrect answers in a number of different situations

Keywords

You should know

explanation 1 — online

1 In each pair of calculations one is incorrect.
Without using a calculator, identify the incorrect calculation.
Give a reason for your choice.

a **i** $56 + 8 \div 8 = 8$ **ii** $56 + 8 \div 8 = 57$

b **i** $25 - 10 \times 2 = 30$ **ii** $25 - 10 \times 2 = 5$

c **i** $(14.1 - 3.8)^2 = 106.09$ **ii** $(14.1 - 3.8)^2 = 20.09$

d **i** $\frac{27.3 \times 2.9}{9.1} = 8.7$ **ii** $\frac{27.3 \times 2.9}{9.1} = 0.87$

e **i** $\frac{\sqrt{100 - 36}}{4} = 2$ **ii** $\frac{\sqrt{100 - 36}}{4} = 20$

f **i** $(20 - 15)^2 - 10 \div 5 = 3$ **ii** $(20 - 15)^2 - 10 \div 5 = 23$

g **i** $5 \times 4.9^2 = 600.25$ **ii** $5 \times 4.9^2 = 120.05$

h **i** $\frac{52 \div 5^2}{3.8} = 28.46$ **ii** $\frac{52 \div 5^2}{3.8} = 0.547$

2 Without using a calculator, pick out a possible answer to the calculation from the numbers given. Give a reason for your choice.

a	58×60	**i** 3480	**ii** 348	**iii** 4080
b	$4.98 \div 0.33$	**i** 1.66	**ii** 15.09	**iii** 0.92
c	$327 \div 1.1$	**i** 297.27	**ii** 29.73	**iii** 327.11
d	1001×2.1	**i** 2001.1	**ii** 2102.1	**iii** 1999.1

3 **a** $\sqrt{x} = 22.5$.

Which of these methods is correct for finding x?

i $x = 2 \times 22.5$ **ii** $x = 22.5^2$ **iii** $x = \sqrt{22.5}$

b $p^2 = 2116$ and p is a positive number.

Which of these methods is correct for finding p?

i $p = 2116 \div 2$ **ii** $p = 2116^2$ **iii** $p = \sqrt{2116}$

c $(m - 25) \div 5 = 15$.

Which of these methods is correct for finding m?

i $m = 15 \times 5 + 25$ **ii** $m = (15 + 25) \times 5$ **iii** $m = 15 + 5$

4 **a** Ali did a survey of eye colours with the 25 pupils in his class.
He produced this table of results showing the percentage in each category.

Eye Colour	Blue	Brown	Hazel	Green
Percentage	40%	30%	25%	15%

Explain why these results must be incorrect.

b Sarah repeated the survey with the same 25 pupils.
These are her results.

Eye Colour	Blue	Brown	Hazel	Green
Percentage	40%	30%	14%	16%

Explain why her results must be incorrect as well.

c The survey was repeated in another class with 30 pupils.
The results are shown below.

Eye Colour	Blue	Brown	Hazel	Green
Percentage	$43\frac{1}{3}\%$	$33\frac{1}{3}\%$	$13\frac{1}{3}\%$	10%

Explain why these results could be correct.

5 These are the masses in kilograms of 10 pupils.

45 38 52 55 51 48 50 49 41 53

The mean mass was calculated as 56 kg.
Without calculating the mean, explain why this value cannot possibly be correct.