FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

R9: Percentages

Reason with percentage change, reverse percentages and interest

20 marks · 25 minutes · Calculator allowed

1) Show that increasing 80 by 30% gives 104

[Question 1: 1 marks]

2) A shop takes 20% off, then a further 10% off the sale price. Kim says this is 30% off in total. Explain her mistake and find the actual total discount.

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[Question 2: 3 marks]

3) After a 15% rise, a price is £69. Ben says the original price was 69×0.85. Explain his mistake and find the original price.

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[Question 3: 2 marks]

4) Show that 150% of 40 is 60

[Question 4: 1 marks]

5) Show that the simple interest on £500 at 4% per year for 3 years is £60.

[Question 5: 2 marks]

6) Which is the better offer on a £64 coat: 25% off or £15 off? Explain.

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[Question 6: 2 marks]

7) Explain why a 50% decrease followed by a 50% increase does not return to the original value.

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[Question 7: 2 marks]

8) Show that a change from 250 to 200 is a 20% decrease.

[Question 8: 2 marks]

9) Explain why 120% of an amount is 1.2 times the amount.

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[Question 9: 1 marks]

10) Ali scored 34 out of 40. Jo scored 82%. Show that Ali did better.

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[Question 10: 2 marks]

11) A population rises by 5% to 8400. Show that it was 8000 before the rise.

[Question 11: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	Shown	80×1.3 (C1).
2	28%	Second discount applies to a smaller amount (C1); $0.8 \times 0.9 = 0.72$ (M1); 28% (C1).
3	£60	Should divide by 1.15 (C1); B1.
4	Shown	1.5×40 (C1).
5	Shown	£20 per year (M1); C1.
6	25% off	£16 off (M1); more than £15 (C1).
7	Explanation	The increase is 50% of a smaller amount, e.g. $100 \rightarrow 50 \rightarrow 75$ (C2).
8	Shown	$\frac{50}{250}$ (M1); C1.
9	Explanation	$120\% = \frac{120}{100}$ (C1).
10	Ali	85% (M1); C1.
11	Shown	$8400 \div 1.05$ (M1); C1.