

This is a calculator test (50 minutes).

The following marks are awarded for each question.

B	Unconditional accuracy mark
M	Method mark – the correct method must be shown but there may be an arithmetic error; the sight of the value given in brackets implies the award of the method mark
A	Accuracy mark – unless the question specifies that working must be shown then the sight of the correct answer implies the award of full marks (unless the answer clearly comes from incorrect working)
C	Communication mark
P	Process mark to show correct process for problem solving. Any other process of a similar standard to achieve an accurate result is acceptable to achieve this mark
FT	Incorrect values may be followed through from one step to the next provided that the correct method is seen in each step and the only errors are arithmetic. This is shown in mark schemes by putting a number in inverted commas
OE	Or equivalent answer mark

Q	Answer	Mark	Comment
1	12.5 (m/sec)	M1	M1 for converting km to m, e.g. 45 000 m/h
		M1	M1 for converting km/h to km/sec or m/sec, e.g. $45 \div (60 \times 60)$ (= 0.0125), e.g. $45\ 000 \div (60 \times 60)$
		A1	
3	120 (g)	M1	for volume, e.g. $10 \times 4 \times 5$ (= 200)(cm ³)
		M1	for $0.6 \times "200"$
		A1	
5	288 N	M1	for $2 \times 3 \times 48$
		A1	for 288
		B1	for Newtons or N
6	64	P1	for $4 \times 2 \times 1$ (= 8); could work in cm
		P1	for $"8" \div 0.001$ (8000); could work in cm
		P1	for $"8000" \div 125$
		A1	

7a	176	M1	for $40 \div 10 \times 44$ OE	
		A1		
7b	25	M1	for $110 \div 44 \times 10$ OE	
		A1		
9a	0.8 (0)	B1		
9b	0.512	M1	for $(0.8)^3$	
		A1		
11	3968 (km)	B1	for converting 24 min to 0.4 hours, e.g. 6.4 hours seen	
		P1		for "6.4" \times 620
		A1		

13	1.232	M1	for $1.1(0) \times 1.12$	
		A1		
15	6 (years)	M1	for 4000×1.019^n OE	
		M1		for complete method, e.g. 4000×1.019 (= 4076), 4000×1.019^2 (= 4153...), 4232..., 4312/3, 4394/5, 4478
		A1		
17	21.25	P1	for $3.4 = \frac{k}{5^2}$ OE or $3.4 \propto \frac{k}{5^2}$ OE or $k = 85$	
		P1		"85" $\div 2^2$ OE
		A1		

Question	Topic	Step	Marks
1	Change km/h to m/s	7th	3
3	Mass density volume	7th	3
5	Pressure	7th	3
7a	Direct proportion	7th	2
7b	Direct proportion	7th	2
9	Multipliers	6th	3
11	Speed distance time	8th	3
13	Percentage change	6th	2
15	Compound interest rate	8th	3
17	Inverse proportion	10th	3

