

Level 4 Test – Knowledge

Name

60 minutes Calculator allowed Scribbling paper allowed

Score: $\frac{1}{25} \times 3.2 =$ $\frac{1}{80}$

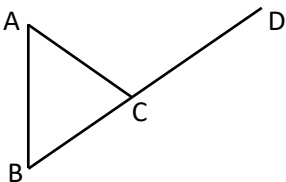
Number		
Q1	How much will a \$125 pair of shoes cost after a 30% discount?	/1
Q2	A laptop costs \$868 in a 30%-off sale. How much would it normally cost?	/1
Q3	Darryl borrows \$1200 for 4 years at 8% p.a. compounding monthly. How much will he have to pay back?	/1
Q4	Janet needs to have \$4000 in 5 years time. To have that, how much will she need to invest now in an account that pays 4.5% compounding annually?	/1

Algebra		
Q5	2 loaves and 5 fishes cost \$13. 5 loaves and 3 fishes cost \$13.50 Write and solve equations to find the cost of a loaf and the cost of a fish.	/2

Q6	Factorise as far as possible: $18x^3y^2 + 8xy^4 - 12xy.$	/1
Q7	Factorise $x^2 - 11x + 24.$	/1
Q8	Express $4x^2 + 24x - 15$ in exact vertex form.	/1
Q9	The length of a rectangular pool is 12 m. Its diagonal is 2 m less than twice its width. What is the width? Show working.	/2
Q10	$5 - 2x < 4 - 5x.$ Show the solution to this on a number line.	/1

Q11	Solve $\frac{a^2+1}{3a} + \frac{5-2a^2}{6a} = 12$. Show working.	/2
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Measurement		
Q12	Write 4.5 m ² in cm ² .	/1
Q13	A pyramid has a square base 80 cm by 80 cm and is 60 cm high. What is its volume in litres?	/1
Q14	A sphere has a volume of 0.2 m ³ . What is its surface area in m ² ?	/1
Q15	By what percentage would the surface area of a cylinder increase if its diameter and height were increased by 10%?	/1

Geometry		
Q16	 <p data-bbox="279 1883 861 1921">If triangle ABC is equilateral, find $\angle ACD$.</p>	/1

Statistics															
Q17	<table border="1"> <tr><td>12</td><td>5 8</td></tr> <tr><td>13</td><td>1 5 7 9</td></tr> <tr><td>14</td><td>0 2 2 5 7 8 8</td></tr> <tr><td>15</td><td>1 3 4 4 5 8</td></tr> <tr><td>16</td><td>1 4 7</td></tr> <tr><td>17</td><td>2</td></tr> </table>	12	5 8	13	1 5 7 9	14	0 2 2 5 7 8 8	15	1 3 4 4 5 8	16	1 4 7	17	2	<p>Give the 5-number summary for this data and produce a box plot.</p>	/2
12	5 8														
13	1 5 7 9														
14	0 2 2 5 7 8 8														
15	1 3 4 4 5 8														
16	1 4 7														
17	2														
Q18	Is the data in the last question numerical, ordinal or categorical?		/1												

Probability			
Q19	If you roll two four-sided dice, each with faces numbered 1 to 4, what is the probability of getting a total of 7?		/1
Q20	A bent coin comes up heads 60% of the time. Draw a tree diagram for three tosses of this coin and hence find the probability of getting 2 heads and a tail.		/2