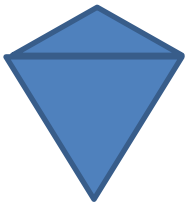
Question	Question	Answer
1 a)	£3.50	**£3.50**
b)	£3.05	**£3.05**
c)	£3510	**£3510**
2 a)	The right angle is where the lines are perpendicular so in this case the bottom left.	
b)	An acute angle is one that is less than a right angle so bottom left again (or bottom right).	
c)	A kite is two triangles that meet each other along the longest length e.g. 	
3 a)	Carefully measure your compass against the ruler to 4cm and then draw all the way around.	
b)	A diameter is any line that passed through the centre of the circle and goes from one side of the circle to the other.	
4 a)	One child is £4.90, and one senior citizen is £5.85 therefore calculate 4.90 + 5.85 = £10.75	**£10.75**
b)	The question is effectively saying how many times does £8.65 go into £60.55 so we do $60.55 \div 8.65 = 7$	**7**
c)	One adult = £8.65 Two children at 4.90 = 2 x 4.90 = £9.80 In total she spends $8.65 + 9.80$ =£18.45 If she pays with £20 then her change is $20 - 18.45 = £1.55$	**£1.55**
5 a)	The second even number would be 4 and therefore the third is 6.	**6**
b)	Add three more sticks in the same shape as the other patterns.	

Copyright©2012 Prior Kain Ltd

<table>
<tr><td>c)</td><td>Each pattern in turn adds three more sticks so the missing numbers are 12, 15.</td><td>12, 15</td></tr>
<tr><td>b)</td><td>The number of sticks is: the pattern number times by 3 therefore she needs 300 sticks to make the 100th pattern.</td><td>300</td></tr>
<tr><td>6. a)</td><td>A line drawn at 8 on Orange and a line at 5 for Green.</td><td></td></tr>
<tr><td>b)</td><td>The number is given by reading on the left hand side so this is six.</td><td>6</td></tr>
<tr><td>c)</td><td>The mode is the most frequent colour so that is yellow as ten sweets are yellow.</td><td>Yellow</td></tr>
<tr><td>d)</td><td>The total number of sweets = reds + yellows + oranges + greens = $6 + 10 + 8 + 5 = 29$</td><td>29</td></tr>
<tr><td>7 i)</td><td>Cone</td><td>Cone</td></tr>
<tr><td>ii)</td><td>Cylinder</td><td>Cylinder</td></tr>
<tr><td>8 a)</td><td>There are 9 coloured in shapes and the total is 12 shapes so the fraction is $= \frac{9}{12} = \frac{3}{4}$</td><td>$\frac{3}{4}$</td></tr>
<tr><td>b)</td><td>There are 21 squares and $\frac{2}{7}$ of 21 is $\frac{2}{7} \times 21 = 6$. Colour in six squares.</td><td>6 squares</td></tr>
<tr><td>c)</td><td>Dividing by 10 means moving the decimal point one place to the left so 0.3.</td><td>0.3</td></tr>
<tr><td>d)</td><td>0.39 means $\frac{39}{100}$</td><td>$\frac{39}{100}$</td></tr>
<tr><td>9 a)</td><td>Measure the line carefully with a ruler.</td><td>6.4cm</td></tr>
<tr><td>b)</td><td>Midpoint will be at 3.2cm along the line.</td><td></td></tr>
<tr><td>10 a)</td><td>
<table>
<tr><th>Number of Parcels</th><th>Tally</th><th>Frequency</th></tr>
<tr><td>2</td><td>||||| ||</td><td>7</td></tr>
<tr><td>3</td><td>||||</td><td>4</td></tr>
<tr><td>4</td><td>||</td><td>2</td></tr>
<tr><td>5</td><td>|</td><td>1</td></tr>
<tr><td>6</td><td>||</td><td>2</td></tr>
</table>
</td><td></td></tr>
<tr><td>b)</td><td colspan="2">The mode is the most frequent number which is clearly 2</td><td>2</td></tr>
</table>

Copyright©2012 Prior Kain Ltd

c)	The range is smallest to highest which is 6-2=4	**4**
11 a)	For 3 days we do $3 \times 6 + 4 = 22$	**22**
b)	If we make an equation we have $6x + 4 = 52$ $6x = 52 - 4$ $6x = 48$ $x = \frac{48}{6} = 8$	**8**
12 a)	Each small increment is worth 1 so this is 30 + 3 = 33	**33**
b)	Each small increment here is 10 so this is 100+80=180	**180**
c)	Each small increment is five so this is two increments after the 100 mark.	
d)	Each increment is now 0.01 so this is 0.2 + 7 increments of 0.01.	
13 a)	The only multiple of 4 is 12.	**12**
b)	The factors of 21 are 1,21, 3 and 7 so its 3	**3**
c)	Prime numbers are only divisible by themselves or 1. Therefore this is either 3 or 11.	**3 (or 11)**
14 a)	For one line of symmetry it must be symmetric around the middle. Add a square to make a T shape.	
b)	Rotational symmetry of order 2 means if you turn it half a circle it would land on itself. Add a square to make this	
15	$\frac{1}{6}$ went to the Physics class which is $\frac{1}{6} \times 36 = 6$ $\frac{2}{9}$ went to the Biology class which is $\frac{2}{9} \times 36 = 8$ The number that went to the chemistry is $36 - 8 - 6 = 22$	**22**
16	The total number of fish is 10 + 23 + 39 = 72 There are 360 degrees in a circle so each fish is $\frac{360}{72} = 5$ degrees	

Copyright©2012 Prior Kain Ltd

	<table><tr><th>Fish</th><th>Frequency</th><th>Number of Degrees</th></tr><tr><td>Perch</td><td>10</td><td>50</td></tr><tr><td>Bream</td><td>23</td><td>115</td></tr><tr><td>Carp</td><td>39</td><td>195</td></tr><tr><td colspan="2">Check this adds to 360 degrees</td><td>50 + 115 + 195=360</td></tr></table> Carefully plot these angles with your protractor from the centre line. And don't forget to mark each part.	
17.	The volume of a cuboid is height x width x breadth = $3 \times 4.5 \times 6.5 = 87.75\ cm^3$	$87.75\ cm^3$
18 a)	$F = 1.8C + 32$ When C=-8 then $F = 1.8 \times -8 + 32 = 17.6$	**17.6**
b)	$F = 1.8C + 32$ When F=68 then $68 = 1.8C + 32$ $68 - 32 = 1.8C$ $36 = 1.8C$ $C = \frac{36}{1.8} = 20$	**20**
19.	Set the compass at about half way along a line and draw a curve on both lines. Where these curves cross each line reset the compass to this and redraw a curve between the two lines. Where these two curves cross is the bisector. Draw a line from the origin to the point where the curves cross.	
20 a)	If 1 pound is 1.68 Euros then we multiple $325 \times 1.68 = 546\ Euros$	**546**
b)	1.50 Euros is 1 pound. There are going to be LESS pounds so we divide 117 by 1.5 = $\frac{117}{1.5} = £78.$	**£78**
21 a)	Carefully plot height and length plots.	
b)	They are proportional (positive correlation) so if the sheep is taller it will also be longer.	
c)	Draw a best fit line through these points. Then read where the height is 76cm which is about 108cm Long.	**105-110cm**

Copyright©2012 Prior Kain Ltd

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>22 a)</td><td>The enlargement must have a bottom twice as long so six squares. The height is twice as high so is six tall. The overall shape remains the same. The orientation is not relevant to this question.</td><td></td></tr>
<tr><td>b)</td><td>This is a reflection in the y-axis or the line x=0.</td><td></td></tr>
<tr><td>23 a)</td><td>$m + m + m + m = 4m$</td><td>4m</td></tr>
<tr><td>b)</td><td>$p \times q \times 4 = 4pq$</td><td>$4pq$</td></tr>
<tr><td>c)</td><td>$5(3x - 2) = 15x - 10$</td><td>$15x - 10$</td></tr>
<tr><td>d)</td><td>$3y(y + 4) = 3y^2 + 12y$</td><td>$3y^2 + 12y$</td></tr>
<tr><td>24 a)</td><td>18 toffees
12 mints.
The ratio 18:12 which is 3:2</td><td>3:2</td></tr>
<tr><td>b)</td><td>The ratio of oranges to apples is 1:5. So for every orange there are 5 apples. If we divide 54 by 6 then that will be the number of oranges = 9. The number of apples is therefore $5x9 = 45$.</td><td>45</td></tr>
<tr><td>25</td><td>
<table>
<tr><td>Time</td><td>Frequency</td><td>Average Time</td><td>Average</td></tr>
<tr><td>$0 < t \leq 6$</td><td>15</td><td>3</td><td>15x3=45</td></tr>
<tr><td>$6 < t \leq 12$</td><td>25</td><td>9</td><td>225</td></tr>
<tr><td>$12 < t \leq 18$</td><td>20</td><td>15</td><td>300</td></tr>
<tr><td>$18 < t \leq 24$</td><td>12</td><td>21</td><td>252</td></tr>
<tr><td>$24 < t \leq 30$</td><td>8</td><td>27</td><td>216</td></tr>
<tr><td>TOTAL</td><td>80</td><td></td><td>1038</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>
The mean is the total of all the averages divided by the frequency
$= \frac{1038}{80} = 12.975 = 13 mins\ to\ (2.s.f)$</td><td>13 mins</td></tr>
<tr><td>26 a)</td><td>$t^6 \times t^2 = t^{6+2} = t^8$
When multiplying powers you add the powers.</td><td>t^8</td></tr>
<tr><td>b)</td><td>$\frac{m^8}{m^3} = m^5$
When dividing powers you subtract them.</td><td>m^5</td></tr>
<tr><td>27 a)</td><td>2.26541555</td><td>2.26541555</td></tr>
</table>

Copyright©2012 Prior Kain Ltd

b)	1.s.f means only one number but 0.2 rounds it down so the answer is 2.	**2**
28	The perimeter $8 + \pi r$. The radius is half the diameter = 4cm. Therefore perimeter $= 8 + 4\pi = 20.566 = 20.57\ (2.d.p)$	**20.57 (2.d.p)**

Copyright©2012 Prior Kain Ltd