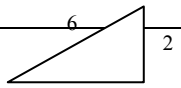
| Qu | Give one mark for each • | Illustration for awarding mark |
|---|---|---|
| **1** | **ans : £6069 3 marks** | |
| | •[1] finds value after 1 year | •[1] 0·8 × 10 500 = £8400 |
| | •[2] finds value after 2 years | •[2] 0·85 × 8400 = £7140 |
| | •[3] finds value after 3 years | •[3] 0·85 × 7140 = £6069 |
| **2a** | **ans : 1·3 3 marks** | |
| | •[1] finds deviations and squares | •[1] 0·09, 0·36, 1, 0·16, 2·56, 4·41 |
| | •[2] substituting in formula | •[2] √(8·58/5) |
| | •[3] answer | •[3] 1·3 |
| **b** | **ans: mean lower/more spread out 1 mark** | |
| | •[1] valid comment | •[1] lower mean but more spread |
| **3** | **ans : 83° 4 marks** | •[1] $arc = \frac{\theta}{360} \times \pi D$ |
| | •[1] for use of correct formula | •[2] $26 \cdot 1 = \frac{\theta}{360} \times 36\pi$ |
| | •[2] for establishing diameter of circle (arc) | •[3] $\theta = \frac{360 \times 26.1}{36\pi}$ |
| | •[3] for re-arrangement | •[4] 83° |
| | •[4] answer | |
| **4a** | **ans : 11404cm$^3$ 2 marks** | |
| | •[1] substituting in formula | •[1] V = $\pi \times 11^2 \times 30$ |
| | •[2] answer | •[2] 11404cm$^3$ |
| **b** | **ans: 75 4 marks** | |
| | •[1] substitute into correct formula | •[1] $V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi \times 3.3^3$ |
| | •[2] evaluate volume of one spere | •[2] 150.53 cm³ |
| | •[3] division into cylinder volume | •[3] 11404 / 150.53 |
| | •[4] answer | •[4] 75 |
| **5** | **ans: $y = 5 \sin 3x$ 3 marks** |   |
| | •[1] knows to use max/min value | •[1] 5….. |
| | •[2] recognizes shape | •[2] ….sin….. |
| | •[3] realises 3 cycles | •[3] …..3$x$ |
| **6** | **ans : 11·4cm 4 marks** | |
| | •[1] assembles facts in right angled triangle | •[1] |
| | •[2] knows to use Pythagoras | •[2] $6^2 - 2^2 = 32$ |
| | •[3] finds half width | •[3] √32 = 5·7 |
| | •[4] final answer | •[4] 5·7 × 2 =11·4 |
| **7** | **ans: 4 marks** | |
| | •[1] for angle | •[1] 75º (between bearings) |
| | •[2] knowing to use Cosine Rule | •[2] $a^2 = b^2 + c^2 - 2bc\cos A$ |
| | •[3] for correct substitution | •[3] $a^2 = 12^2 + 8 \cdot 5^2 - 2 \times 12 \times 8 \cdot 5 \times \cos 75$ |
| | •[4] answer | •[4] 12.78 miles |

| Qu | Give one mark for each • | Illustration for awarding mark |
|---|---|---|
| **8a** | **ans :** $3x + 2y = 255$ **1 mark**<br>•1 states equation | •1 $3x + 2y = 255$ |
| **b** | **ans:** $2x + 3y = 270$ **1 mark**<br>•1 states equation | •1 $2x + 3y = 270$ |
| **c** | **ans : 45p and 60p 4 marks**<br>•1 knows to solve simultaneous eqs.<br>•2 finds a value for x and y<br>•3 finds correct values for x and y<br>•4 states cost of each drink | •1 knows to solve simultaneous eqns.<br>•2 any values found for x and y<br>•3 x = 45; y = 60<br>•4 coke costs 45p; orange costs 60p |
| **9** | **ans : 11·6cm2 7 marks**<br>•1 knows to find area of triangle<br>•2 answer<br>•3 uses correct angle for sector<br>•4 finds area of outer circle<br>•5 finds area of inner circle<br>•6 finds area of ring<br>•7 finds total area | •1 Area $\Delta = \frac{1}{2} \times 3 \cdot 5^2 \times \sin 40$<br>•2 3·93……. cm2<br>•3 320°<br>•4 $\frac{320}{360} \times \pi \times 3^2 = 25{\cdot}1$…….<br>•5 17·45……..<br>•6 7·65…….<br>•7 7·65….. + 3·93…..11·6cm² |
| **10** | **ans : 18·4m 6 marks**<br>•1 finds third angle in triangle<br>•2 uses sine rule to find AB or BC<br>•3 answer<br>•4 uses SOH CAH TOA to find vertical<br>•5 answer<br>•6 subtracts to find height | •1 180 – (60 + 62) = 58o<br>•2 24/sin58° = c/sin62° (or equivalent)<br>•3 25m<br>•4 sin60° = x/25 (or equivalent)<br>•5 x = 21·6m<br>•6 40 – 21·6 = 18·4m |
| **11** | **ans :** $\frac{3}{4}x$ **3 marks**<br>•1 knows to find area of rectangle<br>•2 answer<br>•3 finds side of square | **•1** $\frac{9x}{2} \times \frac{x}{8}$ **……**<br>**•2** **…….** $\frac{9x^2}{16}$<br>**•3** $\sqrt{\frac{9x^2}{16}} = \frac{3x}{4}$ |
| | | |
| | | **Total 50 marks** |