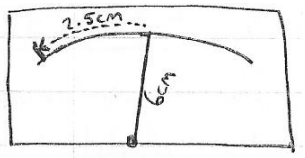
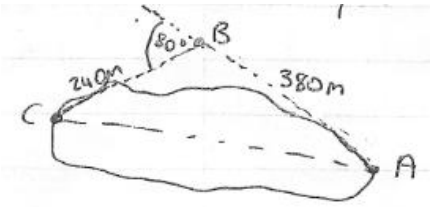
Revision Sheet – Trig **Review: Fri 5/10/18**

Q1. A safety regulation states that the maximum angle of elevation for a rescue ladder is 72°. A fire department's longest ladder is 110 feet. What is the maximum safe rescue height?

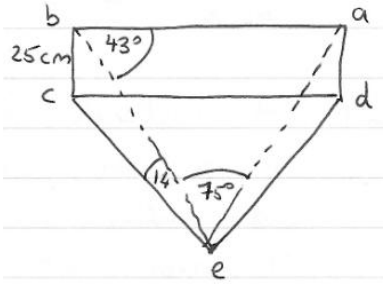
Q2. A voltmeter's pointer is 6cm in length. Find, in radians, the angle through which it rotates when it moves 2.5cm on the scale.



Q3. To approximate the length of a marsh, a surveyor walks 380m from point A to point B. Then the surveyor turns 80° and walks 240m to point C. Approximate the length AC of the marsh. **Ans:**

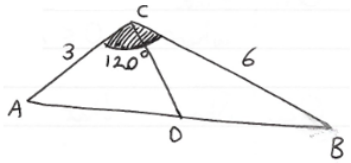


Q4. ced is a triangle on horizontal ground. abcd is a vertical rectangular wall. |bc| = 25cm, |<abe| = 43°, |<aeb| = 75° and |<bec| = 14°.



Find |<aed| correct to the nearest degree.

Q5. ABC is a triangle with |<BCA| = 120°. |AC| = 3 and |BC| = 6. D is a point on [AB] such that the area of the triangle ADC is equal to the area of triangle BCD. Find |<DCA|.



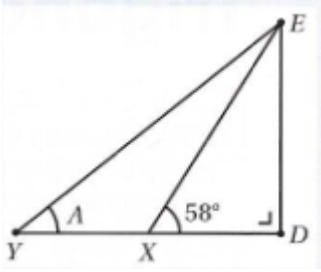
Q6. Find the values of X for which $\cos X = -\frac{1}{\sqrt{2}}$ where $0 \leq X \leq 360°$.

Q7. Solve the equation $sin\, 2x = -\frac{\sqrt{3}}{2}$, where x is in degrees and $x \in R$.

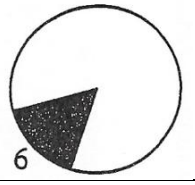
Q8. Solve the equation $\sin 4\theta = 0.9848$ giving all the solutions, to the nearest degree, for $0° \leq \theta \leq 360°$.

Q9. If $\tan A = \frac{1}{4}$ and $\tan B = \frac{1}{3}$, find the value of $\tan(A + B)$ as a fraction. Ans: $\frac{7}{11}$

Q10. In the diagram below |YX| = |XD|, |<EXD| = 58°. YD is perpendicular to DE. If A = |<EYD|, (i) show that $\tan A = \frac{1}{2}\tan 58°$, (ii) calculate the angle A correct to the nearest degree, (iii) if |XE| = 50cm, calculate |YE|.



Q11. In the shaded sector in the diagram, the arc is 6cm long, and the angle of the sector is 0.75 radians. Find the area of the sector.



Q12. Sketch the graph of $f(x) = 2\sin 3x$ in the domain $0° \leq x \leq 360°$.

Q13. Sketch the graph of $g(x) = 3\cos 2x$ in the domain $0 \leq x \leq 2\pi$.

Q14. Sketch the graph of $h(x) = 2 + \sin 2x$ in the domain $-\pi \leq x \leq \pi$.

Answers:

Q1. 104.6ft	Q2. $\frac{5}{12}$	Q3. 483.3m	Q4. 18°	Q5. 90°	Q6. 135°,225°
Q7. $x = 120 + 180n\pi, 150 + 180n$			Q8. $20°, 25°, 110°, 115°, 200°, 205°, 290°, 295°$		
Q9. $\frac{13}{12}$	Q10. (ii) 39° (iii) 68.2cm		Q11. 24cm^2		