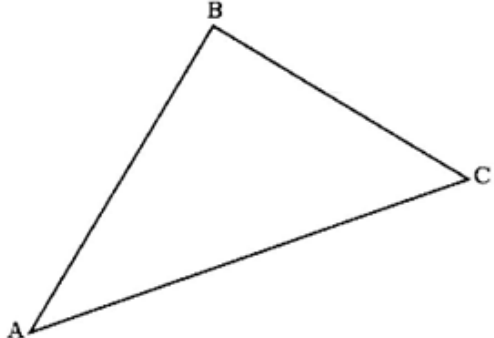
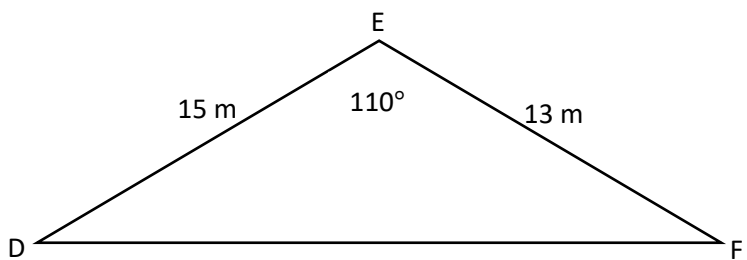
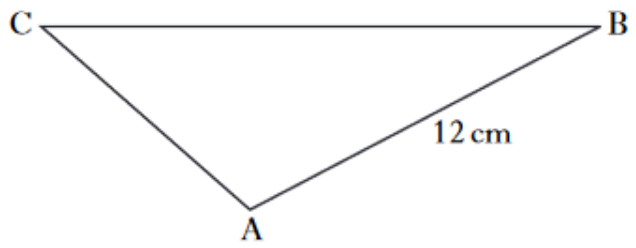
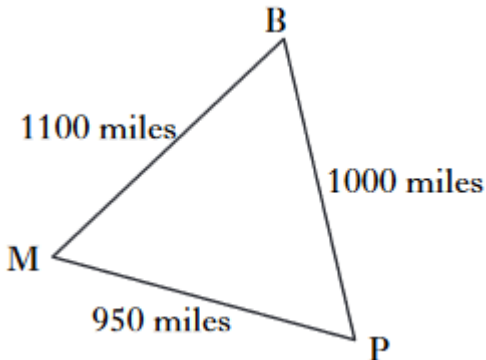
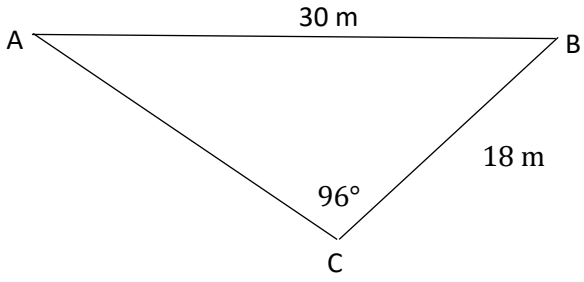


	Using Trig Formulae	
1	 For triangle ABC: • AB is 20 cm, • BC is 16 cm • Angle ABC is 80° Calculate area of this triangle.	2
2	 Find the length of side DF	3
3	 For this triangle: Side AB is 12 cm Angle B is 20° Angle C is 30° Find the length of side AC	3
4	 Calculate the size of angle BPM	3

5	Side AB is 30 metres Side CB is 18 m Angle B is 96° Calculate the size of angle A 	3
	14 marks	

	Using Trig Formulae - Answers	
1	Mark 1 Substitute into the area formula Mark 2 Calculate area $Area = \frac{1}{2} \times 20 \times 16 \times \sin 80$ $Area = 157.6 \text{ cm}^2$	2
2	Use the cosine rule for this triangle Mark 1 Substitute into the cosine rule $DF^2 = 15^2 + 13^2 - 2 \times 15 \times 13 \times \cos 110$ Mark 2 Calculate the exact value $DF^2 = 527.3878559 \dots$ Mark 3 Calculate DF $DF = \sqrt{527.3878559} = 22.96 \text{ or } 23 \text{ cm}$	
3	Use the sine rule for this triangle Mark 1 Substitute into the formula $\frac{AC}{\sin 20} = \frac{12}{\sin 30}$ Mark 2 rearrange sine rule $AC = \frac{12 \times \sin 20}{\sin 30}$ Mark 3 Calculate side AC $AC = 8.2 \text{ cm}$ 2 marks are given for $\frac{AC}{\sin 30} = \frac{12}{\sin 20}$ which leads to an answer of AC = 17.5 cm	3
4	Use the cosine rule for this triangle Mark 1 Substitute into the cosine rule $Angle \text{ BPM} = \frac{(1000^2 + 950^2 - 1100^2)}{2 \times 1000 \times 950}$ Mark 2 Calculate the exact value $Angle \text{ BPM} = \frac{277}{790} = 0.36447368 \dots$ Mark 3 Calculate angle BPM $EDF = \cos^{-1}\left(\frac{277}{790}\right) = 68.6^\circ$ 2 marks are given for finding angle PMB = 57.8° or angle PBM = 53.5°	3
5	Use the sine rule for this triangle Mark 1 Substitute into the sine rule $\frac{18}{\sin A} = \frac{30}{\sin 96} \text{ or } \frac{\sin A}{18} = \frac{\sin 96}{30}$ Mark 2 Rearrange $\sin A = \frac{18 \times \sin 96}{30}$ Mark 3 Calculate angle A $A = \sin^{-1}(0.596713 \dots) = 36.6^\circ$	3
	14 marks	