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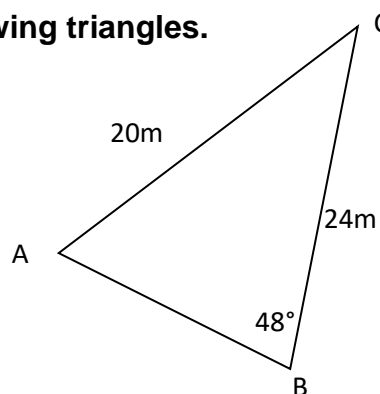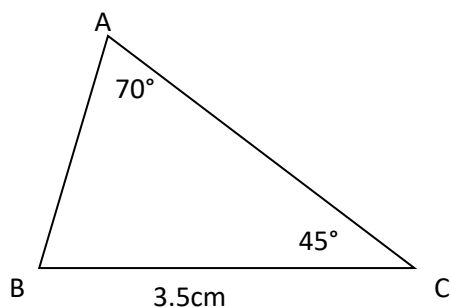# Assignment 2.4 – Sine Law

Round all angles to the nearest degree and all side lengths to the nearest hundredth.
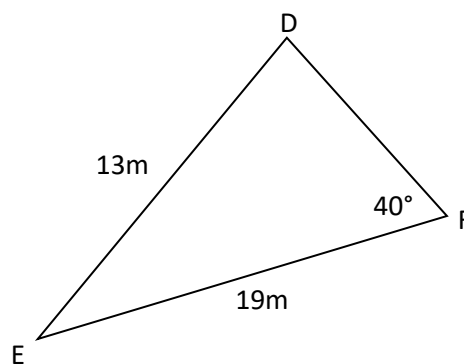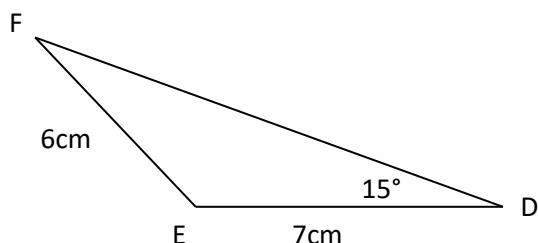
1) **Explain when you would use** $\dfrac{\sin A}{a} = \dfrac{\sin B}{b} = \dfrac{\sin C}{c}$ **and when you would use**

$\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}.$

2) **Determine the length of side c for the following triangles.**

3) **Determine the size of angle E for the following triangles.**

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4) Draw the correspond triangles, then calculate the measure of side *a*.

    a. $\angle A = 48°$, $\angle B = 52°$, and b = 10m

    b. $\angle B = 25°$, $\angle C = 100°$, and b = 80m

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5) Solve the following triangles (find all missing information).

    a. In $\triangle ABC$, a = 4m, b = 3m, and $\angle A = 30°$.

    b. In $\triangle ABC$, a = 2m, b = 6m, and $\angle A = 25°$.

    c. In $\triangle ABC$, a = 3m, b = 4m, and $\angle A = 30°$.

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6) A six-meter loading ramp that makes an angle of 30^0 with the horizontal is to be replaced by a ramp whose angle of elevation is only 15^0. How long will the new ramp be?

7) When an airplane is coming in to land on a 2000m long runway, the angles of depression are $10°$ and $13°$ respectively (near and far ends). How far is the plane from the near end of the runway (to the nearest metre)?