# W6 - The Ambiguous Case of Sine

MCR3U

Jensen

**1)** In $\Delta ABC, a = 13$ cm, $b = 21$ cm, and $\angle A = 29°$. Draw possible diagrams that match the given measurements. Then calculate the length of side $c$.

**2)** In $\Delta ABC, a = 5.9$ m, $b = 7.8$ m, and $\angle A = 36°$. Draw possible diagrams that match the given measurements. Then calculate the length of side $c$.

**3)** In $\Delta ABC, a = 2.4$ cm, $c = 3.2$ cm, and $\angle A = 28°$. Determine two possible measures for $\angle C$ and for the length of side $b$.

**4)** In $\Delta DEF, d = 3$ cm, $e = 5$ cm, and $\angle D = 30°$. Determine two possible measures for $\angle E$ and for the length of side $f$.

**5)** Two ships, S and T, are 120 km apart when they pick up a distress call from a yacht. Ship T estimates that the yacht is 70 km away and that the angle between the line from T to S and the line from S to the yacht is 28°. What are two possible distances, to the nearest tenth of a km, from ship S to the yacht?

## Answers

**1)** 26.5 cm or 10.3 cm
**2)** 10 m or 2.6 m
**3)** $\angle C = 39°$ and $b = 4.7$ cm; $\angle C = 141°$ and $b = 1.0$ cm
**4)** $\angle E = 56°$ and $f = 6$ cm; $\angle E = 124°$ and $f = 2.7$ cm
**5)** 147.5 km or 64.4 km