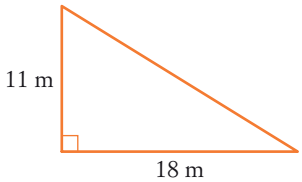
PRIOR LEARNING

Vectors

1 What is the length of the diagonal of a rectangle of length 5 cm and width 2 cm?

2 Find the length of the unknown side in each triangle, correct to one decimal place.

a



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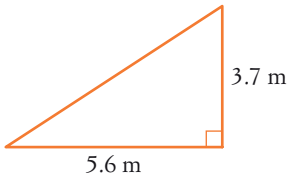

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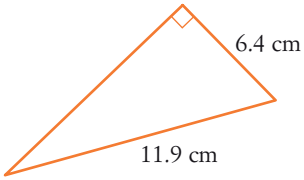

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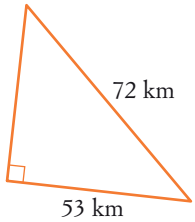
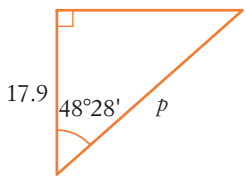


3 Find the unknown side or angle marked in each triangle. Answer correct to one decimal place or to the nearest minute.

a



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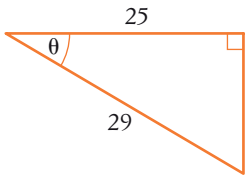

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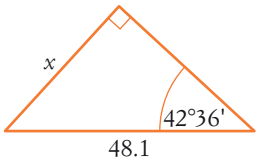

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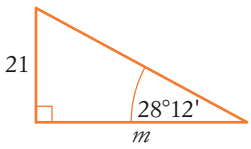

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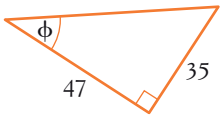

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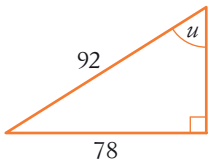


4 Use the sine rule to find all unknown sides and angles in each triangle.

a $\triangle PQR$, where $\angle P = 35.3°$, $\angle Q = 52.8°$ and $q = 67.5$ cm

b $\triangle DEF$, where $\angle F = 111°$, $f = 12.5$ km and $d = 8.96$ km

c $\triangle ABC$, where $\angle B = 124.1°$, $\angle C = 18.7°$ and $c = 94.6$ cm

5 Use the cosine rule to find all unknowns in each triangle.

a $\triangle DAG$, where $\angle D = 121°$, $a = 3$ m and $g = 5$ m

b $\triangle UVW$, where $\angle W = 55°$, $u = 45$ cm and $v = 50$ cm

c $\triangle XYZ$, where $x = 7.2$ m, $y = 12.5$ m and $z = 8.3$ m

6 Use the unit circle to find the exact value of:

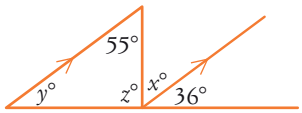
a cos (135°)

b sin (300°)

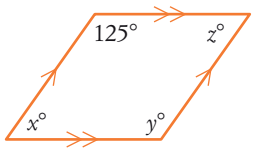
c tan (765°)

7 Find the value of each pronumeral.

a



b



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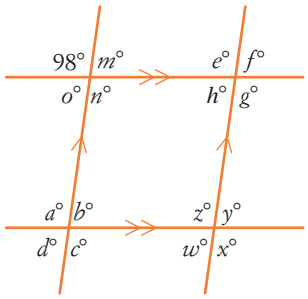

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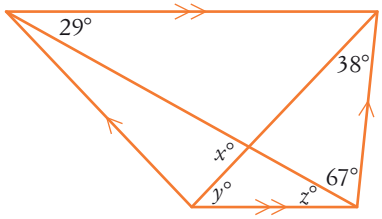

Answers

1 5.4 cm

2 **a** 21.1 m **b** 6.7 m **c** 10.0 cm **d** 48.7 km

3 **a** $p = 27.0$ **b** $\theta = 30° 27'$ **c** $x = 32.6$ **d** $m = 39.2$ **e** $\phi = 36° 40'$ **f** $u = 57° 59'$

4 **a** $\angle R = 91.9°$, $r = 84.7$ cm, $p = 49.0$ cm

b $\angle E = 27°$, $\angle D = 42°$, $e = 6.08$ km

c $\angle A = 37.2°$, $a = 178.4$ cm, $b = 244.3$ cm

5 **a** $\angle A = 21.4°$, $\angle G = 37.6°$, $d = 7$ m

b $\angle U = 56.7°$, $\angle V = 68.3°$, $w = 44.1$ cm

c $\angle X = 33.4°$, $\angle Y = 107.3°$, $\angle Z = 39.4°$

6 **a** $\frac{-\sqrt{2}}{2}$ **b** $\frac{-\sqrt{3}}{2}$ **c** 1

7 **a** $x = 55°$, $z = 89°$, $y = 36°$

b $y = 125°$, $x = z = 55°$

c $n = a = c = x = z = g = e = 98°$, $m = o = b = d = w = y = h = f = 82°$

d $x = 75°$, $y = 46°$, $z = 29°$