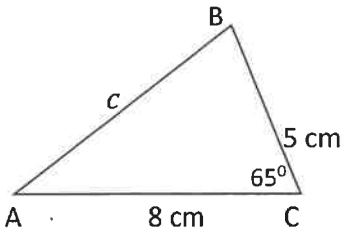
PREC11 Name_____

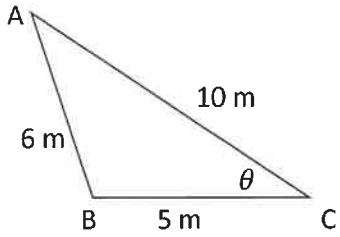
Quiz2A.4/2A.5 Practice

Round side lengths to the nearest tenth and angles to the nearest whole degree.

1. Determine the length of side c:



2. Determine the length of angle θ:



3. Solve ΔABC if $a = 12\ cm, b = 10\ cm$ and $\angle C = 40°$.

over ≫

4. Solve ΔPQR if $\angle P = 110°, q = 10\ cm$ and $\angle R = 40°$.

5. Solve ΔXYZ if $x = 12\ cm, y = 10\ cm$ and $z = 15\ cm$.

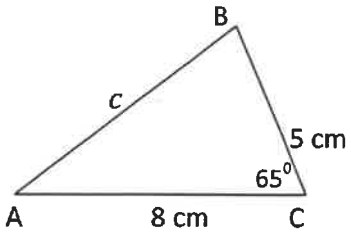
6. An observer spots two ships sailing toward him. The ships are 450 km and 500 km away from the observer and travelling at 50 km/h and 75 km/h respectively. The angle between the lines of sight is $100°$. How far apart are the ships two hours later?

PREC11
Quiz2A.4/2A.5(F)

Name_____

Round side lengths to the nearest tenth and angles to the nearest whole degree.

1. Determine the length of side c:



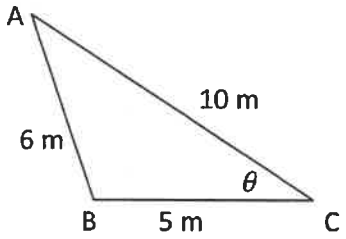
$c^2 = 5^2 + 8^2 - 2(5)(8)\cos 65$

$c^2 = 55.19...$

$c = \sqrt{\text{ans}}$

$c = 7.4$ cm

2. Determine the length of angle θ:



$6^2 = 5^2 + 10^2 - 2(5)(10)\cos\theta$

$36 = 125 - 100\cos\theta$

$-125 \quad -125$

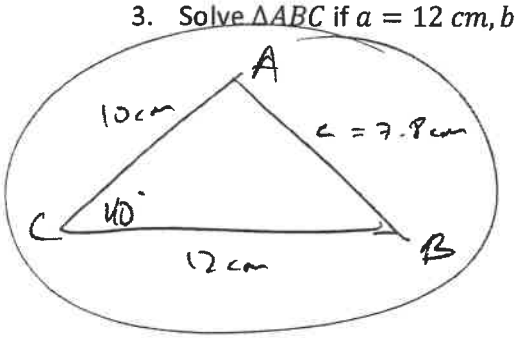
$\frac{-89}{-100} = \frac{-100\cos\theta}{-100}$

$0.89 = \cos\theta$

$\theta = \cos^{-1}(0.89)$

$\theta = 27°$

3. Solve ΔABC if $a = 12\ cm, b = 10\ cm$ and $\angle C = 40°$.



$c^2 = 10^2 + 12^2 - 2(10)(12)\cos 40$

$c^2 = 60.149...$

$c = \sqrt{\text{ans}} = 7.7756$

$c = 7.8$ cm

$\frac{\sin A}{12} = \frac{\sin 40}{7.76}$

$\sin A = \frac{12\sin 40}{7.76}$

$A = \sin^{-1}(\text{ans}) = 83.72$

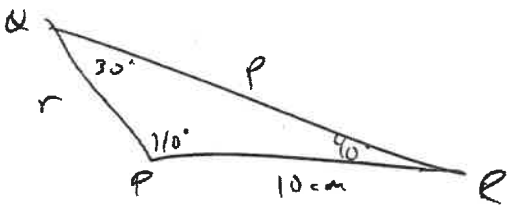
$\angle A = 84°$

$B = 180 - 40 - 84$

$\angle B = 56°$

over >>

4. Solve ΔPQR if $\angle P = 110°, q = 10\ cm$ and $\angle R = 40°$.



$\angle Q = 180 - 110 - 40$

$\angle Q = 30°$

$\frac{\sin 110}{p} = \frac{\sin 30}{10}$

$p = \frac{10 \sin 110}{\sin 30}$

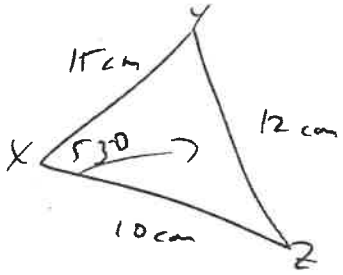
$p = 18.8\ cm$

$\frac{\sin 40}{r} = \frac{\sin 30}{10}$

$r = \frac{10 \sin 40}{\sin 30}$

$r = 12.9\ cm$

5. Solve ΔXYZ if $x = 12\ cm, y = 10\ cm$ and $z = 15\ cm$.



$12^2 = 15^2 + 10^2 - 2(15)(10)\cos X$

$\cos X = .605$

$X = \cos^{-1}(\text{ans})$

$X = 53°$

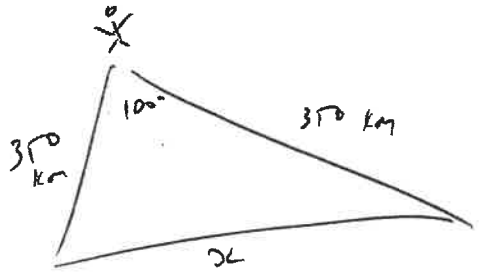
$\frac{\sin Y}{10} = \frac{\sin}{12}$

$Y = 42°$

$Z = 180 - 53 - 42$

$Z = 85°$

6. An observer spots two ships sailing toward him. The ships are 450 km and 500 km away from the observer and travelling at 50 km/h and 75 km/h respectively. The angle between the lines of sight is 100°. How far apart are the ships two hours later?



$450 - 50 \times 2 = 350$

$500 - 75 \times 2 = 350$

$x^2 = 350^2 + 350^2 - 2(350)(350)\cos 100$

$x = \sqrt{\text{ans}}$

$x = 536.2\ km$