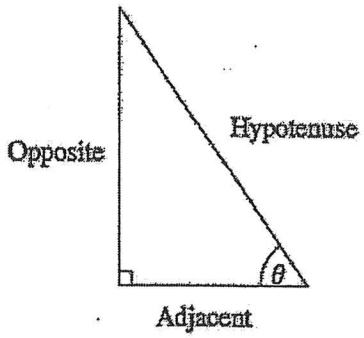
ANSWERS ONLY

Trig Ratio Recap

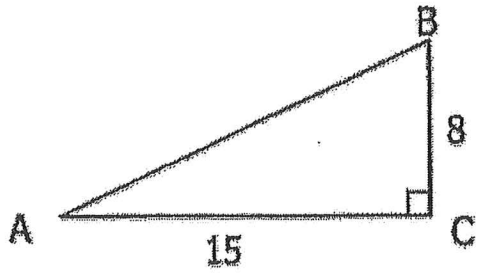
For a right triangle, the sine, cosine, and tangent of the angle θ is defined as:

$\sin\theta = \frac{\text{opp}}{\text{hyp}}$ $\cos\theta = \frac{\text{adj}}{\text{hyp}}$ $\tan\theta = \frac{\text{opp}}{\text{adj}}$

Remember:



Example 1 Using Trig Ratios



$\sin A = \frac{8}{17}$ $\sin B = \frac{15}{17}$

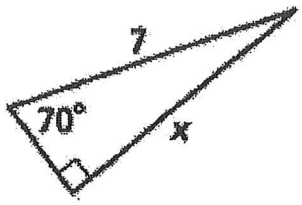
$\cos A = \frac{15}{17}$ $\cos B = \frac{8}{17}$

$\tan A = \frac{8}{15}$ $\tan B = \frac{15}{8}$

Example 2 Finding Missing Sides

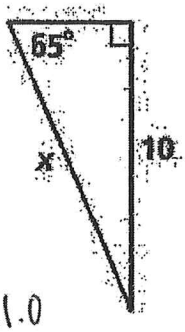
Use trig ratios to find the missing sides of the following triangles.

1.



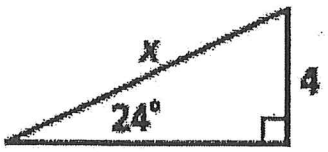
X = 6.6

2.



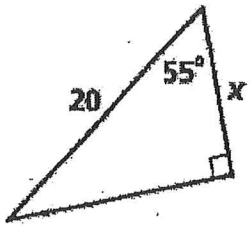
X = 11.0

3.



X = 9.8

4.



X = 11.5

Example 3 Finding Missing Angles

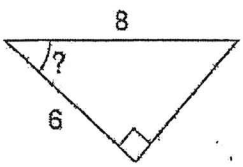
To find a missing _____ in a right triangle, we must use _____ trigonometry.

Ex: $\sin(\text{angle}) = \textit{value} \longrightarrow \sin^{-1}(\text{value}) = \text{angle}$

$\sin(30°) = 0.5 \longrightarrow \sin^{-1}(0.5) =$

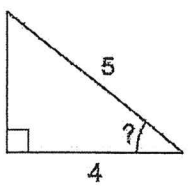
Find the ? angle measure to the nearest degree.

1.



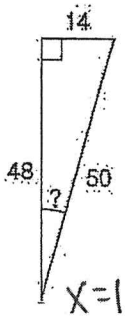
X = 41

2.



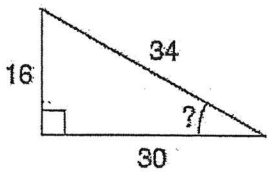
X = 37

3.



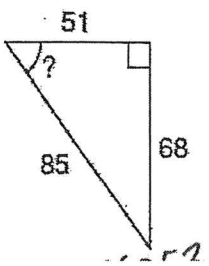
X = 16

4.



X = 28

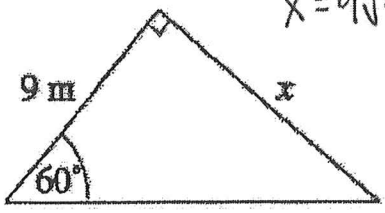
5.



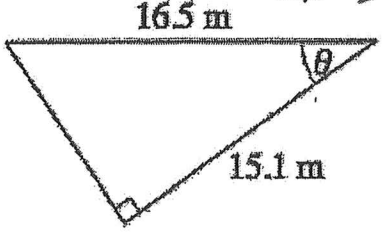
Practice

Find the missing side or missing angle. Show your set-up and solution.

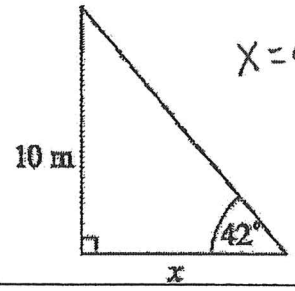
1. $x = 9\sqrt{3}$



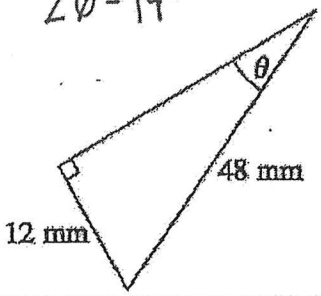
2. $\angle\theta = 24°$



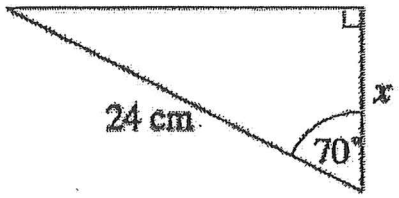
3. $x = 9.0$



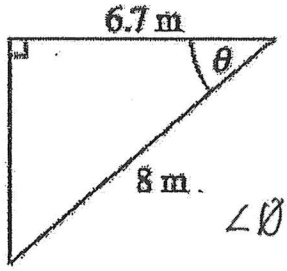
4. $\angle\theta = 14°$



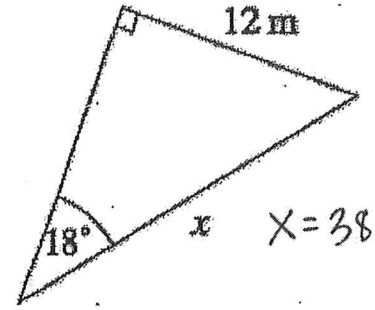
5. $x = 8.2$



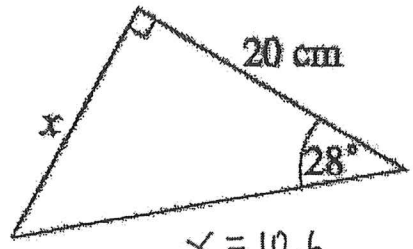
6. $\angle\theta = 33°$



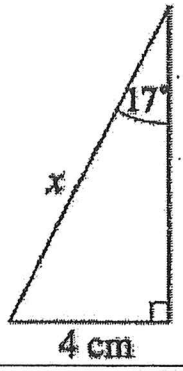
7. $x = 38.8$



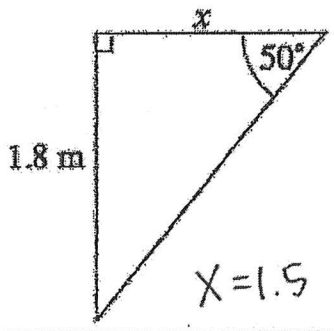
8. $x = 10.6$



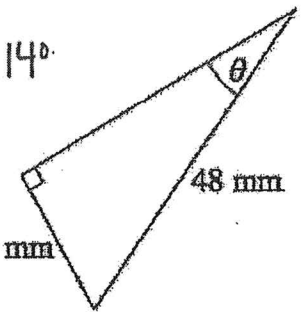
9. $x = 13.7$



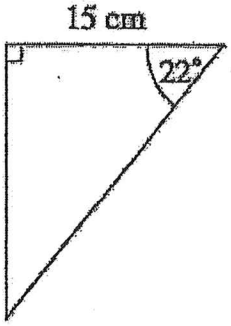
10. $x = 1.5$



11. $\angle\theta = 14°$



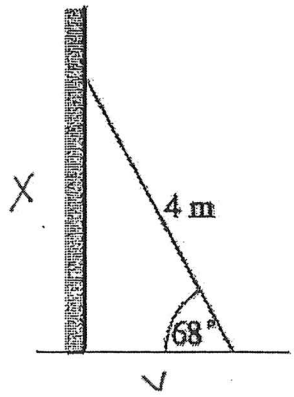
12. $x = 6.1$



13. A ladder leans against a wall as shown in the diagram.

(a) How far is the top of the ladder from the ground? $x = 3.7\text{m}$

(b) How far is the bottom of the ladder from the wall? $y = 1.5\text{m}$

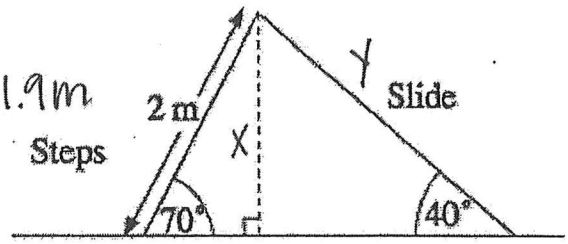


14.

The diagram shows a slide.

(a) Find the height of the top of the slide. $X = 1.9\text{m}$

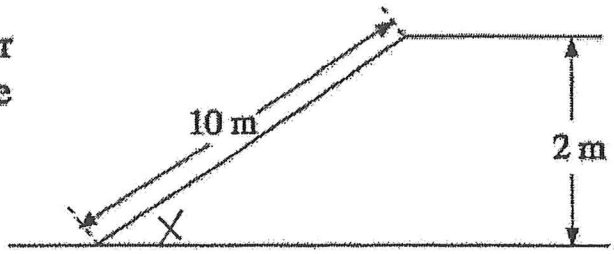
(b) Find the length of the slide. $Y = 3.0\text{m}$



15.

As cars drive up a ramp at a multi-storey car park, they go up 2 metres. The length of the ramp is 10 metres. Find the angle between the ramp and the horizontal.

$X = 11.5°$



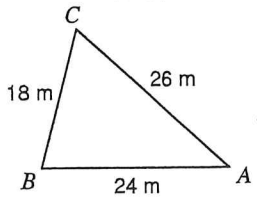
Algebra 2 Part 2 Name_____

Law of Sines and Cosines Review Worksheet

Date_____

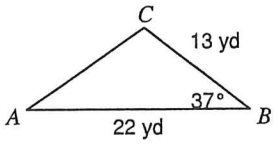
Solve each triangle. Round your answers to the nearest tenth.

1) Find ∠C

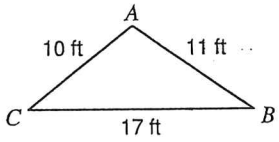


63°

2)

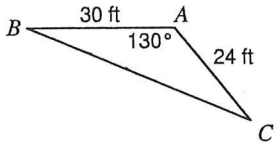


3) Find ∠A

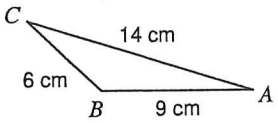


108°

4)

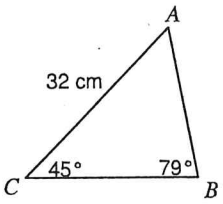


5) Find ∠C

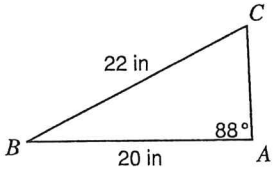


26°

6)



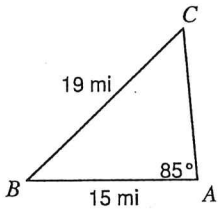
7) Find ∠C & $\overline{AC}$



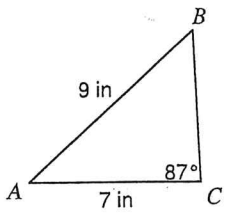
∠C = 65.3°

AC = 9.9

8)

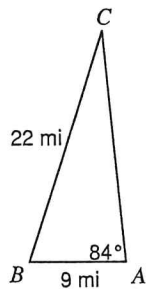


9) Find ∠B



51°

10)



State if the three side lengths form an acute, obtuse, or right triangle. odd's

9) 5, 12, 13

Right △

10) 4, 12, 13

11) 9, 12, 15

Right △

12) 3, 4, 5

13) 9, $2\sqrt{22}$, 13

Right △

14) $\sqrt{7}$, $\sqrt{11}$, 4

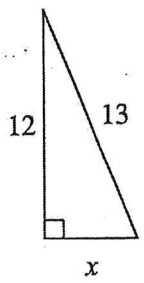
15) 14, $5\sqrt{7}$, 16

Acute △

16) $\sqrt{11}$, $\sqrt{10}$, $\sqrt{21}$

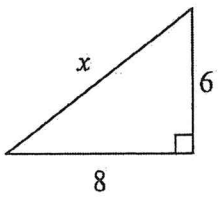
Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

17)



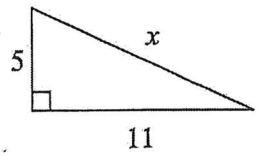
X=5

18)



Find the missing side of each triangle. Leave your answers in simplest radical form.

19)



$X = \sqrt{146}$

20)