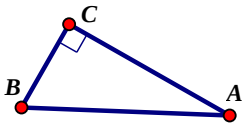
Geometry
Unit Two – G.SRT.6-8 Review (IC/HW26)
For each multiple choice question, please circle your answer.

Name: _____
Date: _____ Period: _____

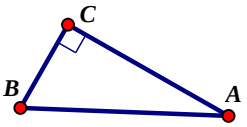
1. The opposite side of ∠A is:

A) $\overline{AB}$ B) $\overline{BC}$ C) $\overline{CA}$ D) Depends



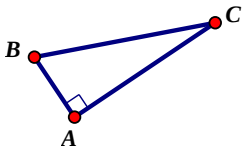
2. The hypotenuse of ΔABC is:

A) $\overline{AB}$ B) $\overline{BC}$ C) $\overline{CA}$ D) Depends



3. Which side is adjacent to ∠C but opposite ∠B?

A) $\overline{AB}$ B) $\overline{BC}$ C) $\overline{CA}$ D) Depends



4. The Cosine ratio from a 30° reference angle in a right triangle is:

A) $\frac{1}{\sqrt{3}}$ B) $\frac{1}{\sqrt{2}}$ C) $\frac{1}{2}$ D) $\frac{\sqrt{3}}{2}$

5. The Sine ratio from a 60° reference angle in a right triangle is:

A) $\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$ B) $\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$ C) $\frac{1}{2}$ D) $\frac{\sqrt{3}}{2}$

6. The Tangent ratio from a 60° reference angle in a right triangle is:

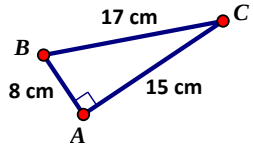
A) $\frac{\sqrt{3}}{1}$ B) $\frac{\sqrt{2}}{1}$ C) $\frac{2}{1}$ D) $\frac{\sqrt{3}}{2}$

7. The Sine ratio from a 45° reference angle in a right triangle is:

A) $\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$ B) $\frac{\sqrt{2}}{1}$ C) 1 D) $\frac{1}{2}$

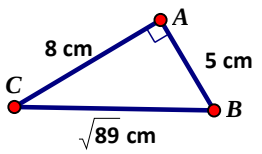
8. If ∠C is the reference angle, then the cosine ratio would be:

A) $\frac{15}{17}$ B) $\frac{8}{15}$ C) $\frac{8}{17}$ D) $\frac{15}{8}$

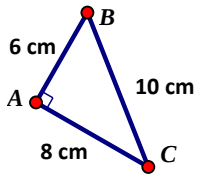


9. If ∠B is the reference angle, then the sine ratio would be:

A) $\frac{8}{\sqrt{89}}$ B) $\frac{5}{\sqrt{89}}$ C) $\frac{8}{5}$ D) $\frac{5}{8}$

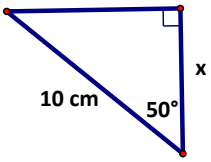


10. The ratio $\frac{6}{10}$ represents which relationship?



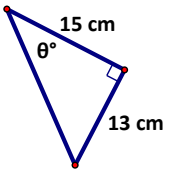
A) sin ∠C B) sin ∠B C) tan ∠C D) cos ∠C

11. The value of x is approximately:



A) 6.43 cm B) 7.66 cm C) 11.92 cm D) 15.56 cm

12. The value of Θ is approximately:



A) 29.93° B) 40.91° C) 49.09° D) 60.07°

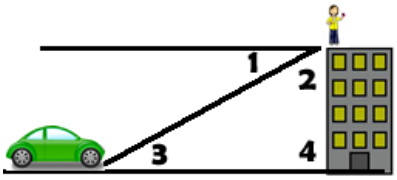
13. Which of the following is equal to cos 35°

A) sin 35° B) cos 55° C) sin 55° D) cos 145°

14. If cos Θ = sin ß then the two angles must be:

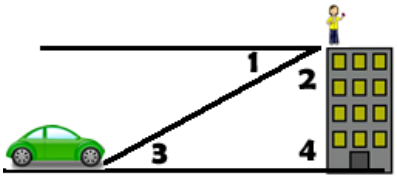
A) supplementary B) complementary C) a linear pair D) adjacent

15. The angle of depression from the girl to the car is:



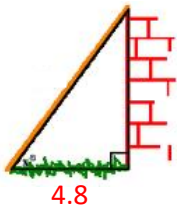
A) ∠1 B) ∠2 C) ∠3 D) ∠4

16. The angle of elevation from the car to the girl is:



A) ∠1 B) ∠2 C) ∠3 D) ∠4

17. A ladder reaches a window 12 ft above the ground and the foot of the ladder is 4.8 ft from the wall. How long is the ladder?



$12^2 + 4.8^2 = c^2$

A) 14 B) 13 C) 12 D) 11

18. Find the value of x that makes the equation given true.

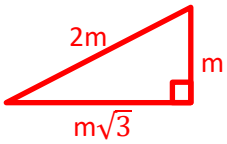
a. sin(3x – 10) = cos(52)

3x – 10 + 52 = 90
3x+42 = 90
3x = 48
x = 16

b. $\cos(\frac{2}{5}x - 5) = \sin(40 + x)$

$\frac{2}{5}x - 5 + 40 + x = 90$
$\frac{7}{5}x + 35 = 90$
$(\frac{5}{7})\frac{7}{5}x = 48(\frac{5}{7})$
$x = \frac{275}{7} \approx 39.29$

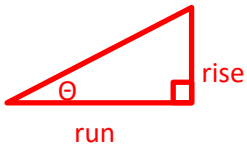
19. When looking at a trigonometry table Alex notices that the Sine ratio for the 30° reference angle in a right triangle is exactly 0.5. Explain why that happened.



$\sin 30 = \frac{opp}{hyp} = \frac{m}{2m} = \frac{1}{2}$

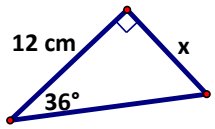
20. What does tangent have to do with slope?

$\tan \Theta = \frac{opp}{adj} = \frac{rise}{run}$



21. Solve for the missing information. (Round all final answers to 2 decimals places)

a)

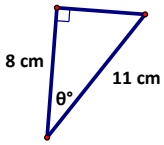


$\tan 36 = \frac{x}{12}$

$x = 12\tan 36$

x ≈ 8.72 cm

b)

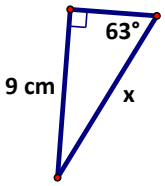


$\cos \Theta = \frac{8}{11}$

$\Theta = \cos^{-1}(\frac{8}{11})$

Θ = 43.34°

c)

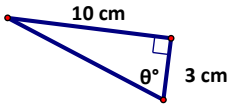


$\sin 63 = \frac{9}{x}$

$x = \frac{9}{sin63}$

x ≈ 10.10 cm

d)

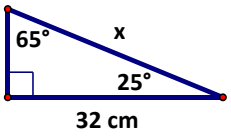


$\tan \Theta = \frac{10}{3}$

$\Theta = \tan^{-1}(\frac{10}{3})$

Θ = 73.30°

22. Solve for the value of x in <u>TWO DIFFERENT WAYS</u>. Show the work for both methods.



$\sin 65 = \frac{32}{x}$

$x = \frac{32}{sin35}$

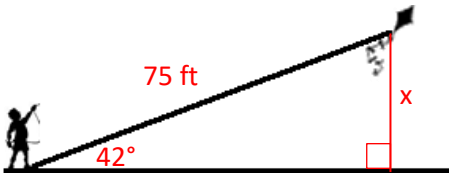
x = 35.31 cm

$\cos 25 = \frac{32}{x}$

$x = \frac{32}{cos25}$

x = 35.31 cm

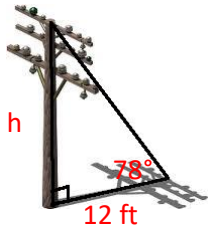
23. A boy is flying a kite on a string 75 ft long. Determine the height of the kite in feet, if the string is at an angle of 42° to the ground. (2 decimal places)



$(75)\sin 42 = \frac{x}{75}(75)$

x = 50.18 ft

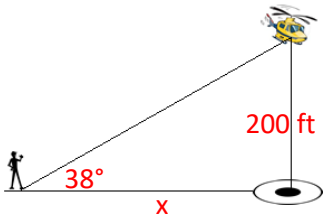
24. A telephone pole casts a shadow 12 ft long when the sun's rays strike the ground at an angle of 78°. How tall is the pole? (2 decimal places)



$(12)\tan 78 = \frac{h}{12}(12)$

h = 56.46 ft

25. A helicopter is hovering 200 ft in the air over a landing pad. If the man sees the helicopter at an angle of elevation of 38°, how far is he from the landing pad (to the nearest foot)??

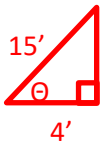


$(x)\tan 38 = \frac{200}{x}(x)$

$x = \frac{200}{\tan 38}$

x ≈ 256 ft

26. A 15 ft ladder is leaning against a wall. The foot of the ladder is 4 ft from the wall. Find the angle that the ladder makes with the ground. (2 decimal places)

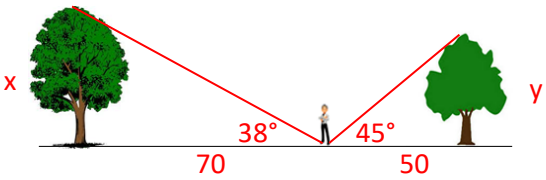


$\cos \Theta = \frac{4}{15}$

$\Theta = \cos^{-1}(\frac{4}{15})$

Θ = 74.53°

27. A man stands between two trees and he is 70 ft from the tall tree and 50 ft from the shorter tree. If he sees the taller tree at an angle of 38° and the smaller at 45° , what is the difference in the heights of the two trees (to the nearest foot) ?



$(70)\tan 38 = \frac{x}{70}(70)$

x = 54.69 ft

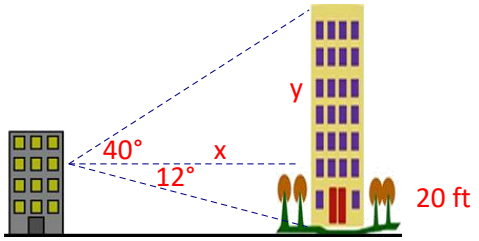
$(50)\tan 45 = \frac{y}{50}(50)$

y = 50 ft

x – y = difference in height

50.69 – 50 = 4.69 ≈ 5 ft

28. From an apartment window 20 ft above the ground in the shorter building, the angle of depression of the base of a nearby tower is 12° and the angle of elevation of the top of the tower is 40°. Find the height of the nearby building (to the nearest foot).



$(x)\tan 12 = \frac{20}{x}(x)$

$x = \frac{20}{\tan 12}$

x ≈ 94.09 ft

$(94.09)\tan 40 = \frac{y}{94.09}(94.09)$

y = 94.09 tan 40

y ≈ 78.95 ft

20 + y = building height

20 + 78.95 = 98.95 ≈ 99 ft