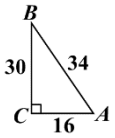
Name: _____

Semester 2 Final Review H
Mixed Trigonometry and Right Triangles

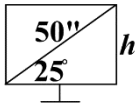
1. Consider right triangle *ABC* shown below.



Which trigonometric ratios are equivalent to $\frac{15}{8}$? Select all that apply.

A. sin *B*
B. cos *B*
C. sin *A*
D. tan *B*
E. cos *A*
F. tan *A*

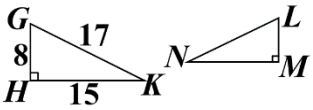
2. A 50" television measures 50 inches across the diagonal. The diagonal makes a 25° angle with the bottom of the television.



Select all equations that can be used to solve for the height, *h*, of the television screen.

A. $cos25° = \frac{h}{50}$
B. $tan65° = \frac{h}{50}$
C. $sin25° = \frac{h}{50}$
D. $cos65° = \frac{h}{50}$
E. $sin65° = \frac{h}{50}$
F. $tan25° = \frac{h}{50}$

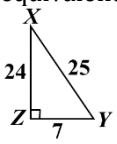
3. Triangle GHK is similar to triangle LMN.
Note: Drawings are not necessarily to scale.



Select all angles whose sine equals $\frac{8}{17}$.

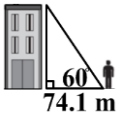
A. ∠*G*
B. ∠*H*
C. ∠*K*
D. ∠*L*
E. ∠*M*
F. ∠*N*

4. Right triangle *XYZ* is shown below. Determine the ratio equivalent to cos(X).



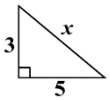
A. $cos(X) = \frac{7}{24}$
B. $cos(X) = \frac{7}{25}$
C. $cos(X) = \frac{24}{25}$
D. $cos(X) = \frac{24}{7}$

5. Alice is standing on a street looking at the top of a building with a 60° angle of elevation. She is 74.1 meters from the building. How tall is the building?



A. 128.3 m
B. 42.8 m
C. 52.4 m
D. 74.1 m

6. A group of students were in a disagreement about how to solve for *x* in the figure. Which method(s) are correct? *Select all that apply.*



A. Use the Pythagorean theorem
B. Use the Triangle Inequality theorem
C. Use $tan40$
D. Use 30-60-90 triangles
E. Use 45-45-90 triangles
F. Use $cos40$
G. Use $sin40$

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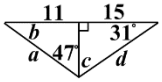
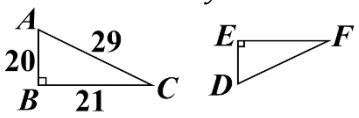
7. A student was asked to solve for each of the variables in the diagram below, rounding side lengths to the nearest tenth, if necessary. Which one of the variables did the student solve incorrectly?



A. $a = 16.1$
B. $b = 43°$
C. $c = 59°$
D. $d = 17.5$

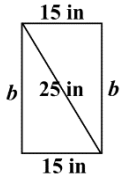
8. Triangle ABC is similar to triangle DEF.
Note: Drawings are not necessarily to scale.



Select all angles whose cosine equals $\frac{20}{29}$.

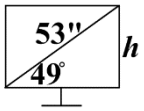
A. $\angle A$
B. $\angle B$
C. $\angle C$
D. $\angle D$
E. $\angle E$
F. $\angle F$

9. Letty bought a rectangular TV. If the TV has a diagonal distance of 25 in. and a width of 15 in., what is the approximate height of the TV?



A. 10 in
B. 20 in
C. 6.3 in
D. 40 in

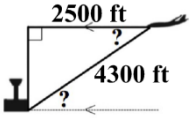
10. A 53" television measures 53 inches across the diagonal. The diagonal makes a 49° angle with the bottom of the television.



Select all equations that can be used to solve for the height, h, of the television screen.

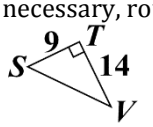
A. $sin49° = \frac{h}{53}$
B. $sin41° = \frac{h}{53}$
C. $cos49° = \frac{h}{53}$
D. $cos41° = \frac{h}{53}$
E. $tan41° = \frac{h}{53}$
F. $tan49° = \frac{h}{53}$

11. The diagonal distance from a plane to the airport is 4300 feet. The pilot reports that the plane's horizontal distance is 2500 feet. Find the angle of depression from the plane to the airport.



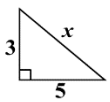
A. 36°
B. 30°
C. 60°
D. 54°

12. Calculate the measure of angle S in the triangle below. If necessary, round your answer to the nearest degree.



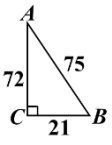
A. 40°
B. 50°
C. 33°
D. 57°

13. A group of students were in a disagreement about how to solve for x in the figure. Which method(s) are correct? *Select all that apply.*



A. Use the Pythagorean theorem
B. Use the Triangle Inequality theorem
C. Use $tan40$
D. Use 30-60-90 triangles
E. Use 45-45-90 triangles
F. Use $cos40$
G. Use $sin40$

14. Consider right triangle ABC shown below.



Which trigonometric ratios are equivalent to $\frac{7}{25}$? Select all that apply.

A. cos A
B. tan B
C. cos B
D. sin B
E. sin A
F. tan A

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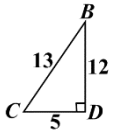
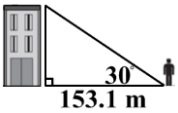
15. Right triangle *BCD* is shown below. Determine the ratio equivalent to tan(B).



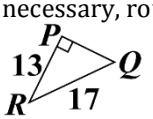
A. $tan(B) = \frac{5}{12}$
B. $tan(B) = \frac{12}{13}$
C. $tan(B) = \frac{5}{13}$
D. $tan(B) = \frac{12}{5}$

16. Noah is standing on a street looking at the top of a building with a 30° angle of elevation. He is 153.1 meters from the building. How tall is the building?



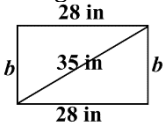
A. 265.2 m
B. 88.4 m
C. 108. 3 m
D. 216.5 m

17. Calculate the measure of angle R in the triangle below. If necessary, round your answer to the nearest degree.



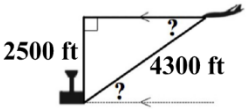
A. 50°
B. 40°
C. 37°
D. 53°

18. George bought a rectangular TV. If the TV, shown below, has a diagonal measure of 35 in. and a width of 28 in., what is the approximate height of the TV?



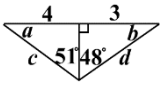
A. 44.8 in
B. 21 in
C. 14 in
D. 7.9 in

19. The diagonal distance from a plane to the airport is 4300 feet. The pilot reports that the plane's altitude is 2500 feet. Find the angle of depression from the plane to the airport.



A. 36°
B. 30°
C. 60°
D. 54°

20. A student was asked to solve for each of the variables in the diagram below, rounding side lengths to the nearest tenth, if necessary. Which one of the variables did the student solve incorrectly?



A. $a = 39°$
B. $b = 42°$
C. $c = 5.1$
D. $d = 2.2$

Semester 2 Final Review H

Mixed Trigonometry and Right Triangles Answers:

1. F	2. C & D	3. C & F	4. C	5. A
6. A	7. A	8. A & D	9. B	10. A & D
11. D	12. D	13. A	14. C & E	15. A
16. B	17. B	18. B	19. A	20. D