Questions on 6.11 HW?

Apr 8-8:30 AM

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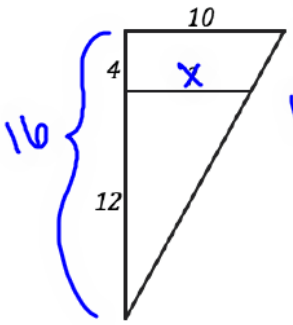
Based on each set of triangles or parallel lines create a proportion and solve it to find the missing values.

1.



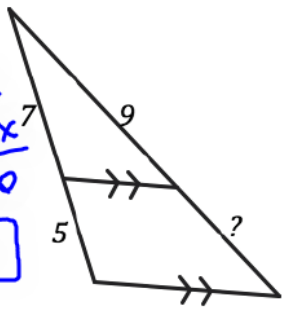
$\frac{12}{x} = \frac{16}{10}$

$12(10) = 16x$

$\frac{120}{16} = \frac{16x}{16}$

$7.5 = x$

2.



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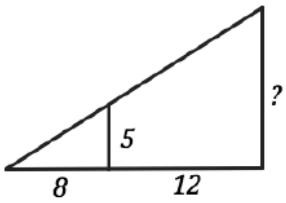

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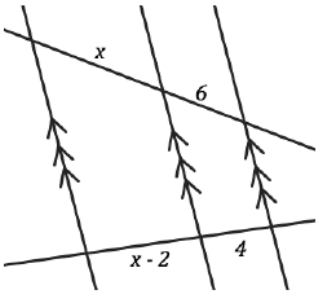

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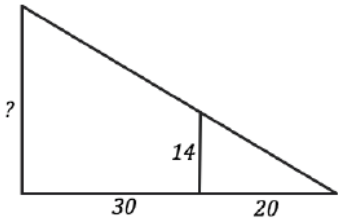

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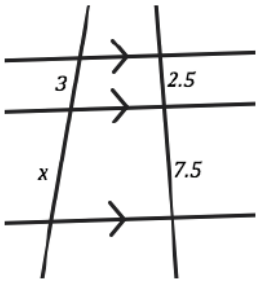

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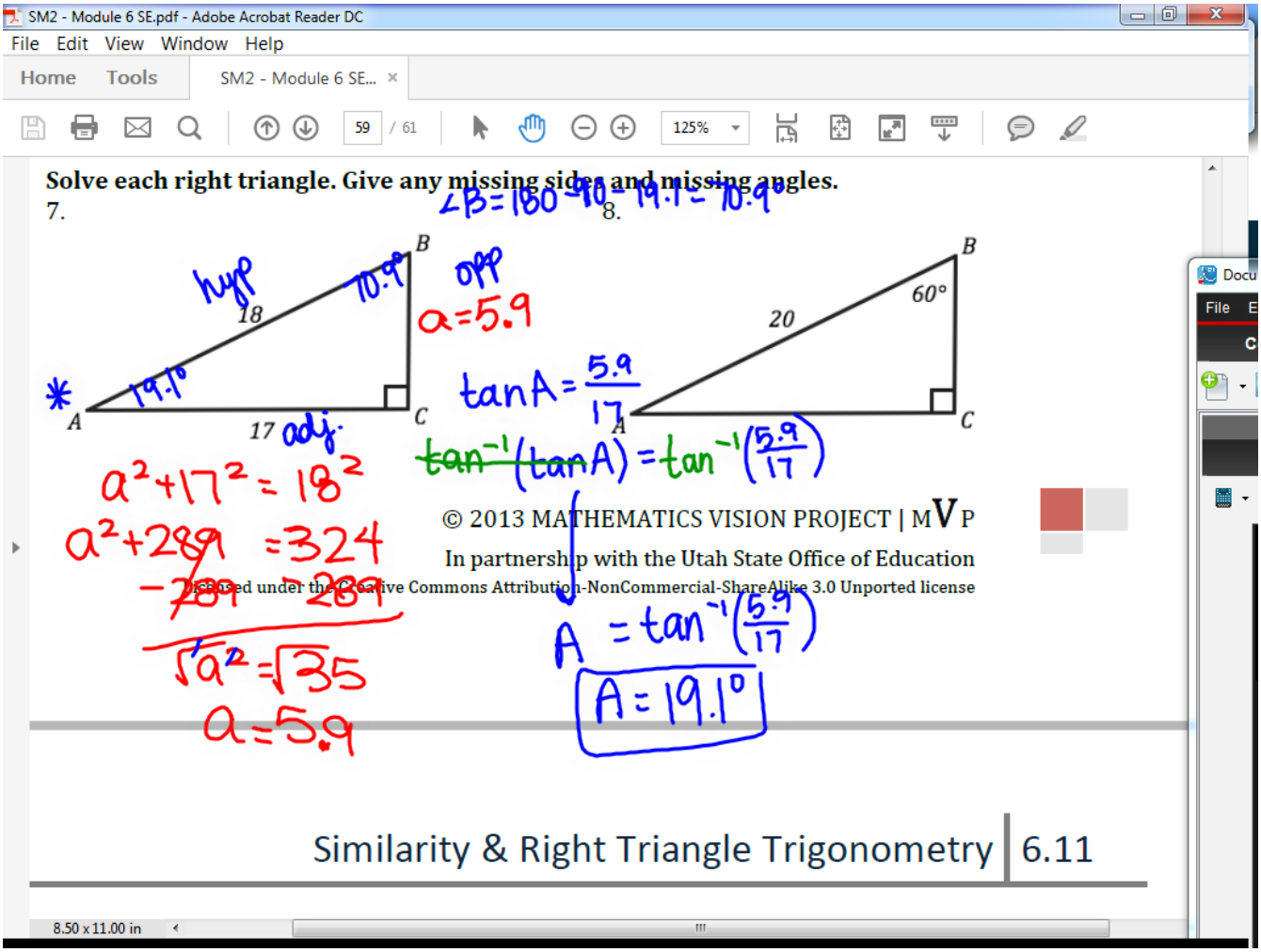
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125%
Solve each right triangle. Give any missing sides and missing angles.
7.
8.
∠B = 180 − 90 − 19.1 = 70.9°
hyp
opp
adj
18
70.9°
a = 5.9
19.1°
17
tan A = 5.9/17
tan⁻¹(tan A) = tan⁻¹(5.9/17)
a² + 17² = 18²
a² + 289 = 324
−289 −289
√a² = √35
a = 5.9
A = tan⁻¹(5.9/17)
A = 19.1°
20
60°
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Similarity & Right Triangle Trigonometry | 6.11
8.50 x 11.00 in

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Use the given trigonometric ratio to sketch a right triangle and find the missing sides and angles.

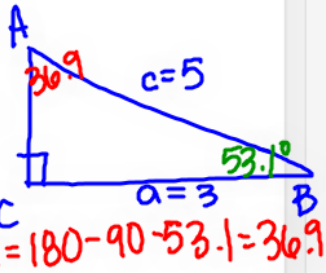
13. $\sin(A) = \frac{1}{2}$

14. $\cos(B) = \frac{3}{5}$

$\cos^{-1}(\cos B) = \cos^{-1}\left(\frac{3}{5}\right)$

$B = \cos^{-1}\left(\frac{3}{5}\right)$ 4=b

$B = 53.1°$



$\angle A = 180 - 90 - 53.1 = 36.9$

15. $\tan(B) = \frac{6}{7}$

16. $\sin(B) = \frac{7}{10}$

17. $\cos(A) = \frac{5}{8}$

18. $\tan(A) = \frac{4}{15}$

8.50 x 11.00 in

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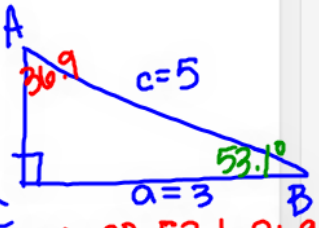

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8.50 x 11.00 in

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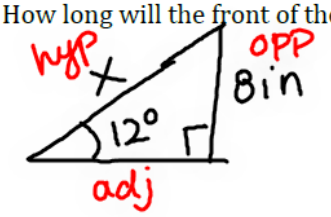
20. Mark is building his son a pitcher's mound so he can practice for his upcoming baseball season in the back yard. Mark knows that the league requires an incline of 12° and an elevation of 8 inches in height. How long will the front of the pitcher's mound need to be?



$x \cdot \sin 12 = \frac{8}{x} \cdot x$

$\frac{x \cdot \sin 12}{\sin 12} = \frac{8}{\sin 12}$

$x = \frac{8}{\sin 12}$

$x = 38.5 \text{ in}$

21. Susan is designing a wheelchair ramp. Wheelchair ramps require a slope that is no more than 1-inch of rise for every 12-inches of ramp length. Susan wants to determine how much horizontal distance a ramp of 6-feet in length will span? She also wants to know the degree of incline from the base of the ramp to the ground.

22. Michael is designing a house with a roof pitch of 5. Roof pitch is the number of inches that a roof will rise for every 12 inches of run. What is the angle that will need to be used in building the trusses and supports for the roof? What is the angle of a roof with 5/12 pitch increase? At the peak of the roof what angle will there be when the front and the back of the roof come together?

8.50 x 11.00 in

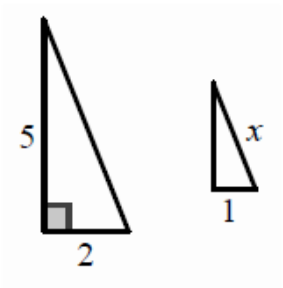
SECONDARY MATH II

Module 6 Study Guide: Similarity & Right Triangle Trigonometry

Directions: Show ALL work. Round any decimals to one decimal place, unless otherwise stated.

For 1-3: Find the missing side for the similar shapes that are shown below.

1.



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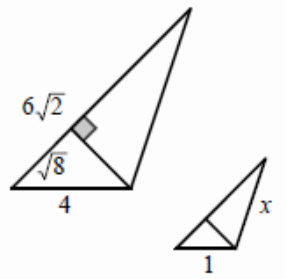

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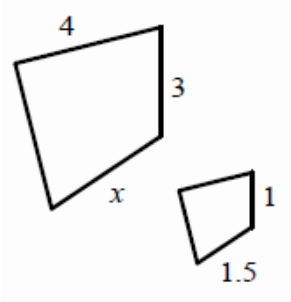
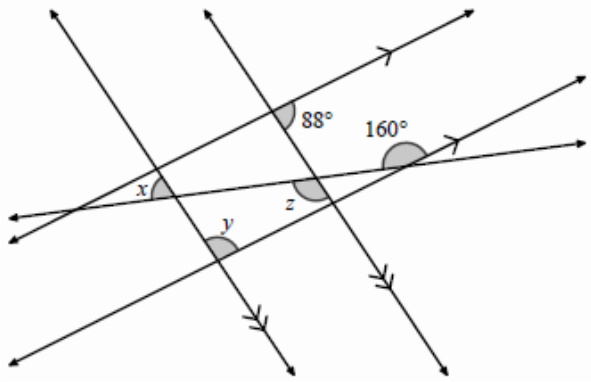


4. Find the measurements of angles x, y, z.



5. Find the measure of all of the angles for the quadrilateral below, given ΔABC to the right.

the trig ratios below.

$sinA =$

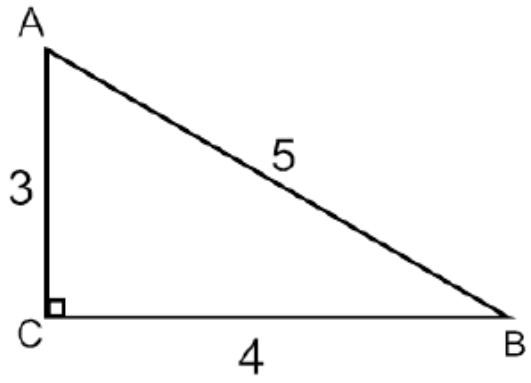
$cosA =$

$tanA =$

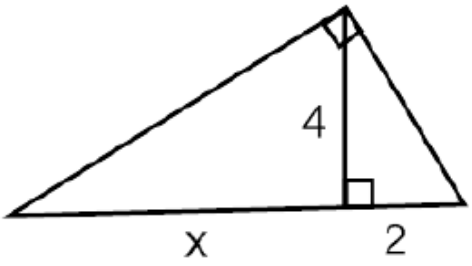
$sinB =$

$cosB =$

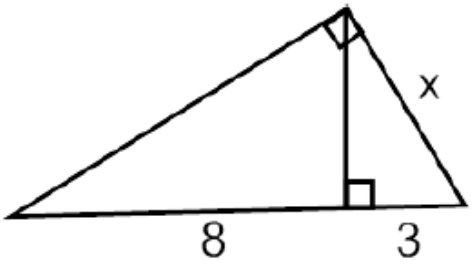
$tanB =$



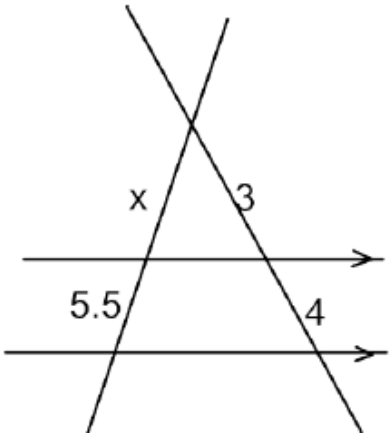
6. Set up a proportion and solve for x.



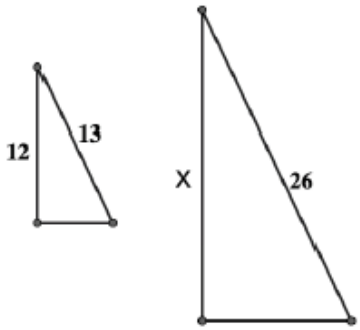
7. Set up a proportion and solve for x.



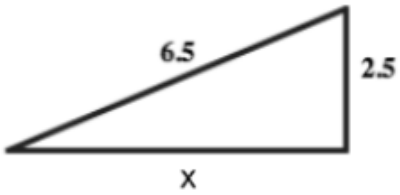
8. Set up a proportion and solve for x.



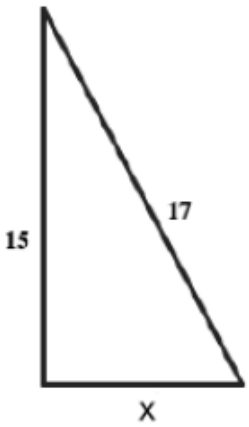
9. Set up a proportion and solve for x.



10. Find the missing side length, x.



11. Find the missing side length, x.



12. Find the coordinates of the midpoint, M, of a line segment between (0,6) and (8,2).

13. Find the coordinates of the midpoint, M, of a line segment between (-4,5) and (3,-6).

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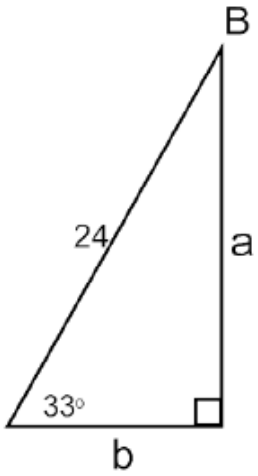
14. Find all missing side lengths and angle measures.
$m\angle B =$

$a =$

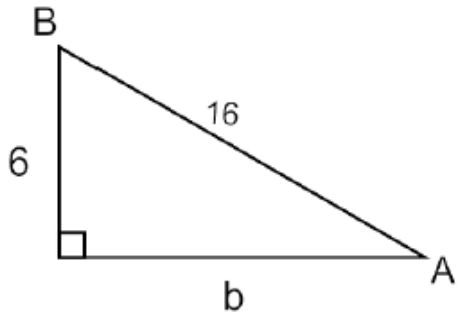
$b =$



15. Find all missing side lengths and angle measures.
$m\angle A =$

$m\angle B =$

$b =$



Find the missing angle or side length given the trigonometric ratio below.

16. $sinB = 0.67$

17. $\cos(53°) = \frac{x}{6}$

18. $tanA = 1.2$

For the following, draw a picture, set up a trig ratio, and solve for the missing angle or side length.

19. John places a 12 foot ladder against the side of a building. If the ladder makes an angle of elevation with the ground of 62°, how far up the side of the building is the ladder?

20. In southern Utah, there is a 10 mile stretch of I-15 that increases 1.6 miles. What is the angle of elevation?