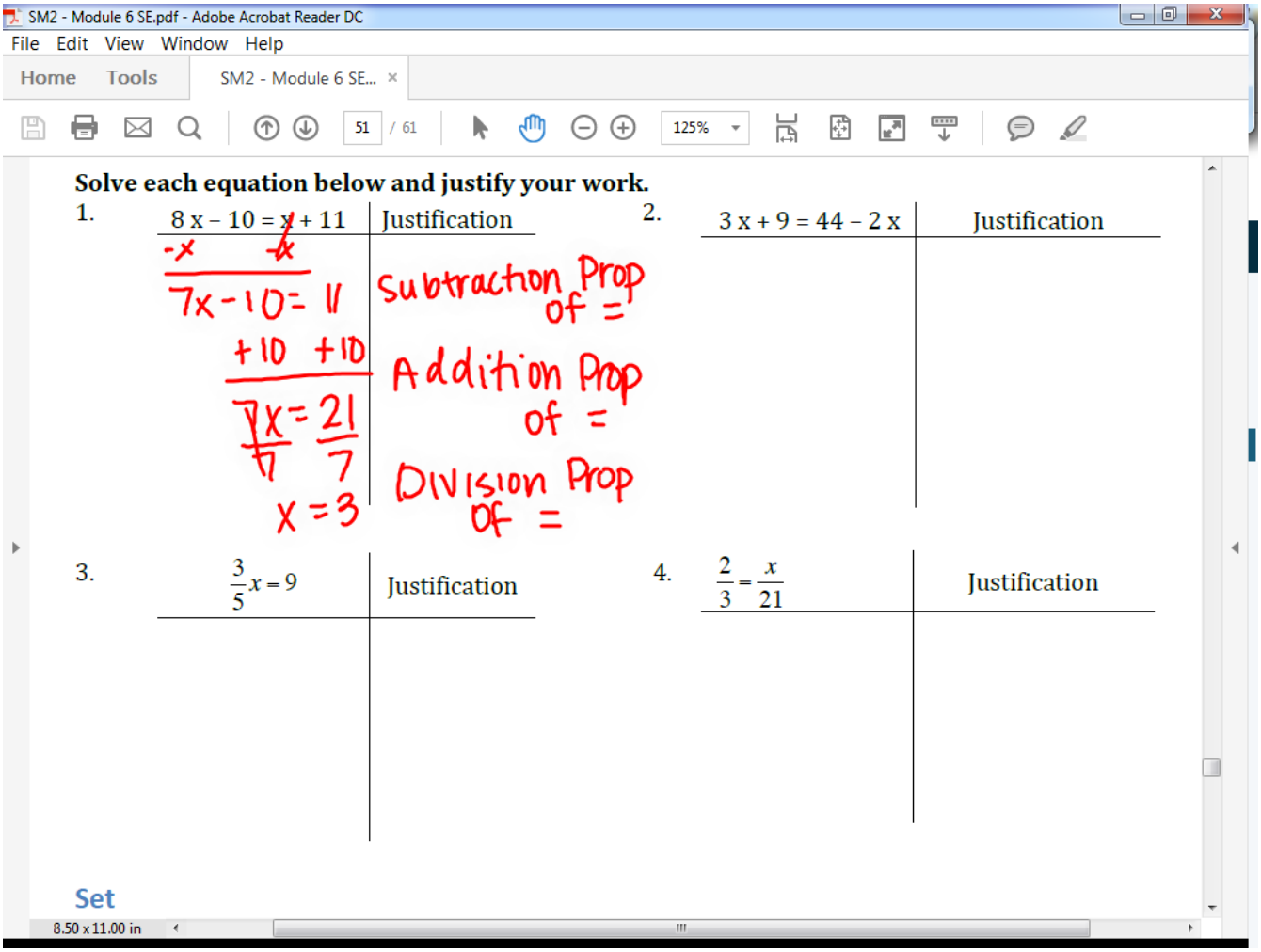
Questions on 6.9 HW?

SPLIT ASSEMBLY - LONG			
FIRST LUNCH		SECOND LUNCH	
PERIOD	**TIME**	**PERIOD**	**TIME**
1/2	7:45 - 8:50 am	1/2	7:45 - 8:50 am
1st Assembly		8:55 - 10:15 am	
Classes attending the 1st assembly will take roll in class and then proceed to the auditorium.	3/4	10:20 - 11:40 am	
3rd Period for 2nd Assembly	3/4	8:55 - 10:15 am	
2nd Assembly		10:20 - 11:40 am	
LUNCH	11:40 - 12:10 pm	5/6	11:45 - 12:50 pm
5/6	12:15 - 1:20 pm	LUNCH	12:50 - 1:20 pm
7/8	1:25 - 2:30 pm	7/8	1:25 - 2:30 pm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125%
Solve each equation below and justify your work.
1.
8 x – 10 = x + 11
Justification
-x -x
7x - 10 = 11
Subtraction Prop of =
+10 +10
7x = 21
Addition Prop of =
7 7
x = 3
Division Prop of =
2.
3 x + 9 = 44 – 2 x
Justification
3.
3/5 x = 9
Justification
4.
2/3 = x/21
Justification
Set
8.50 x 11.00 in

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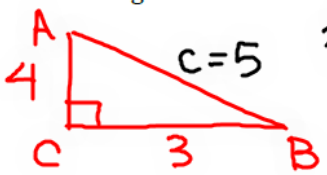
Based on the given trigonometric ratio, sketch a triangle and find a possible value for the missing side as well as the other missing trig ratios. Angles A and B are the two non-right angles in a right triangle.

5. a. $\tan(A)=\frac{3}{4}$ (opp / adj)
   b. $\sin(A)=\frac{3}{5}$
   c. $\cos(A)=\frac{4}{5}$
   d. $\tan(B)=\frac{4}{3}$
   e. $\sin(B)=\frac{4}{5}$
   f. $\cos(B)=\frac{3}{5}$

g. Sketch of Triangle:



$3^2+4^2=c^2$

$9+16=c^2$

$\sqrt{25}=\sqrt{c^2}$

$5=c$

6. a. $\tan(A)=$
   b. $\sin(A)=$
   c. $\cos(A)=$
   d. $\tan(B)=$
   e. $\sin(B)=\frac{8}{17}$
   f. $\cos(B)=$

g. Sketch of Triangle:

Similarity & Right Triangle Trigonometry | 6.9

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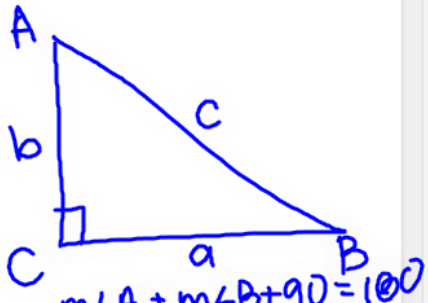
Given a right triangle with angles A and B as the non-right angles. Determine if the statements below are true or false. Justify your reasoning and show your argument.

9. $\cos(A)=\frac{1}{\sin A}$

10. $\tan(B)=\tan(90°-A)$

True; they are the same.

11. $\tan(A)\cdot\cos(A)=\sin(A)$



$m\angle A + m\angle B + 90 = 180$

$m\angle A + m\angle B = 90$

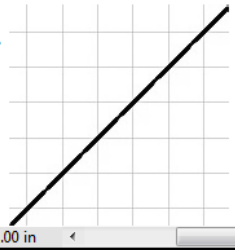
$m\angle B = 90 - m\angle A$

Go

Topic: Slope as a ratio

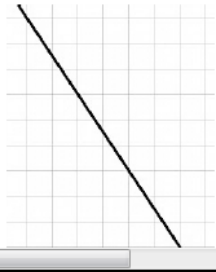
On each grid draw three slope defining triangles of different sizes and label the rise and run then write the slope of the line.

12.



13.

14.



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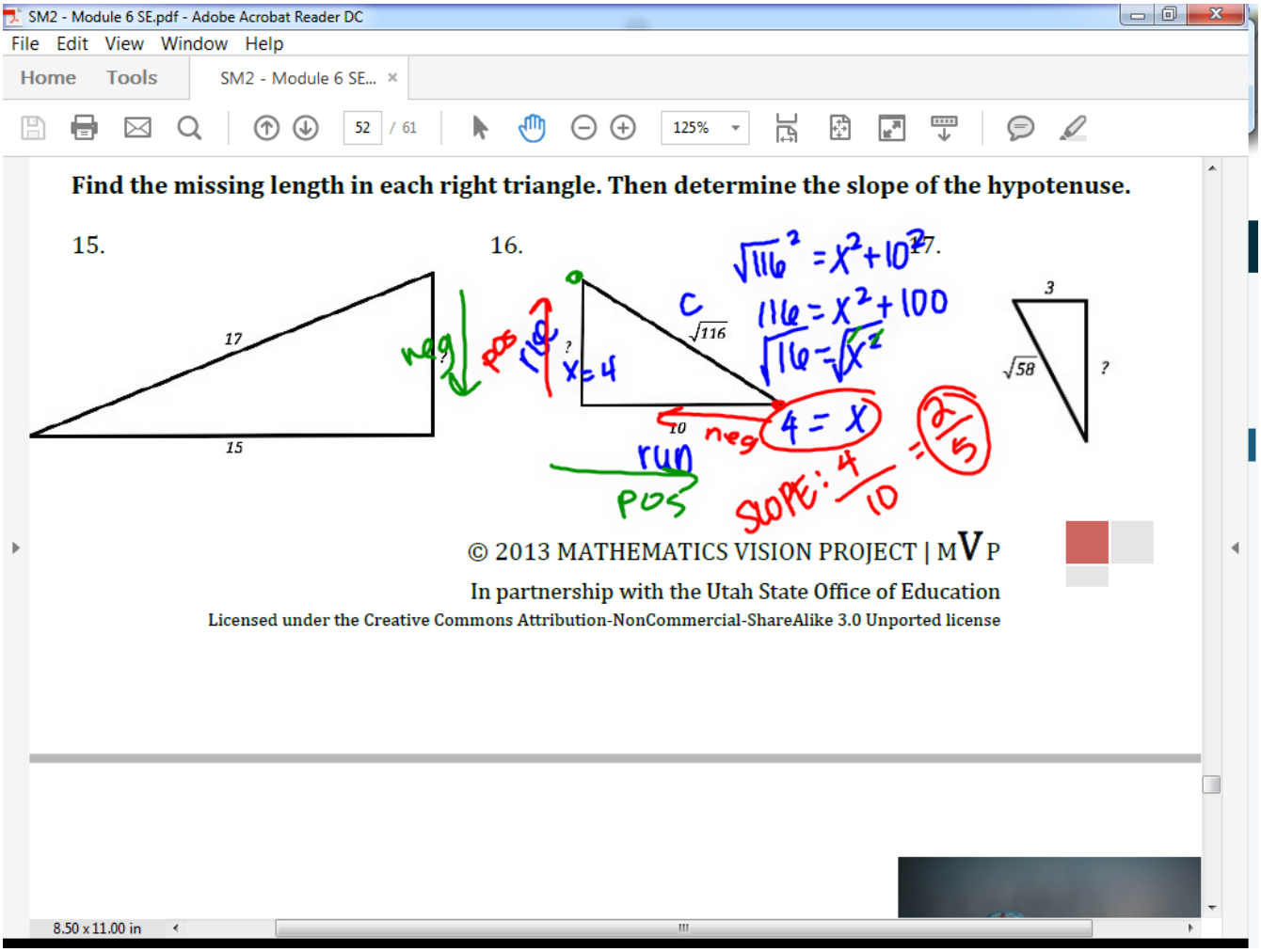
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Find the missing length in each right triangle. Then determine the slope of the hypotenuse.
15.
16.
17.
17
15
neg
pos
run
?
x=4
c
√116
10
neg
run
pos
√116² = x² + 10²
116 = x² + 100
√116 = √x²
4 = x
SLOPE: 4/10 = 2/5
3
√58
?
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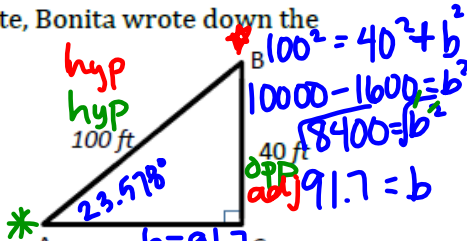
6.10 Finding the Value of a Relationship

A Solidify Understanding Task

Part I: What's your angle?

Andrea and Bonita are going for a walk straight up the side of a hill. Andrea decided to stretch before heading up the hill while Bonita thought this would be a good time to get a head start. Once Bonita was 100 feet away from Andrea, she stopped to take a break and looked at her GPS device that told her that she had walked 100 feet and had already increased her elevation by 40 feet. With a bit of time to waste, Bonita wrote down the trigonometric ratios for ∠A and for ∠B.



1. Name the trigonometric ratios for ∠A and for ∠B.

$\sin A = \frac{40}{100} = \frac{4}{10} = \frac{2}{5}$ $\quad \sin B = \frac{91.7}{100}$

$\cos A = \frac{91.7}{100}$ $\quad \cos B = \frac{40}{100} = \frac{2}{5}$

$\tan A = \frac{40}{91.7}$ $\quad \tan B = \frac{91.7}{40}$

When Andrea caught up, she said "What about the unknown angle measures? When I was at the bottom and looked up to see you, I was thinking about the "upward" angle measure from me to you. Based on your picture, this would be ∠A." Bonita knows that she can solve equations involving variables by isolating the variable. She then wrote the following trig ratio she found: $\sin A = \frac{2}{5}$ and said "Now we just have to get 'A' by itself." Together, the girls talked about using *inverse trigonometric functions* to find unknown angle values. Bonita explained, "The inverse of sine is also written as sin^{-1}. To solve for ∠A, take the inverse of the trigonometric function on both sides to get ∠A by itself." Using Bonita's explanation, Andrea solved for ∠A using the following steps:

$$\sin A = \frac{2}{5}$$

$$\sin^{-1}(\sin A) = \sin^{-1}\left(\frac{2}{5}\right)$$

$$A \approx 23.578°$$

2. Use the trigonometric ratio you found for $\cos B$ to find the value of ∠B.

$\cos B = \frac{2}{5}$

$\cos^{-1}(\cos B) = \cos^{-1}\left(\frac{2}{5}\right)$

$B = \cos^{-1}\left(\frac{2}{5}\right)$

$B = 66.422°$

Mar 14-1:56 PM

3. Find all unknown values for the following right triangle:

a) $\angle\alpha =$ 56.3°
b) $\angle\beta =$ 33.7°
c) $\angle\gamma =$ 90°
d) $a =$ 12 m
e) $b =$ 8 m
f) $c =$ 14.4 m

$\tan^{-1}(\tan\alpha) = \tan^{-1}\left(\frac{12}{8}\right)$

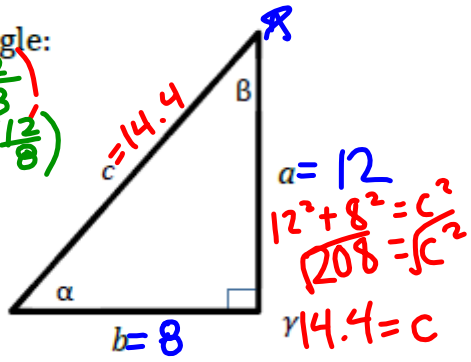
$\alpha = \tan^{-1}\left(\frac{12}{8}\right)$

$\alpha = 56.3°$

$\sin^{-1}(\sin\beta) = \sin^{-1}\left(\frac{8}{14.4}\right)$

$\beta = \sin^{-1}\left(\frac{8}{14.4}\right)$

$\beta = 33.7°$



$12^2 + 8^2 = c^2$

$208 = c^2$

$\sqrt{208} = c$

$14.4 = c$

4. Bonita and Andrea started talking about all of the ways to find unknown values in right triangles and decided to make a list. What do you think should be on their list? Be specific and precise in your description. For example, 'trig ratios' is not specific enough. You may use the following sentence frame to assist with writing each item in your list:

When given _____, you can find _____ by _____.

Part II: Angle of elevation and angle of depression

During their hike, Andrea mentioned that she looked up to see Bonita. In mathematics, when you look straight ahead, we say your line of sight is a horizontal line. From the horizontal, if you look up, the angle from the horizontal to your line of sight is called the **angle of elevation**. Likewise, if you are looking down, the angle from the horizontal to your line of sight is called the **angle of depression.**

5. After looking at this description, Andrea mentioned that her angle of elevation to see Bonita was 23.5°. They both agreed. Bonita then said her angle of depression to Andrea was 66.5°. Andrea agreed that it was an angle of depression but said Bonita's angle of depression is 23.5°. Who do you think is correct? Use drawings and words to justify your conclusion.

6. What conclusion can you make regarding the angle of depression and the angle of elevation? Why?

Homework

Finish 6.10 "Ready, Set, Go"

Mar 28-9:36 AM