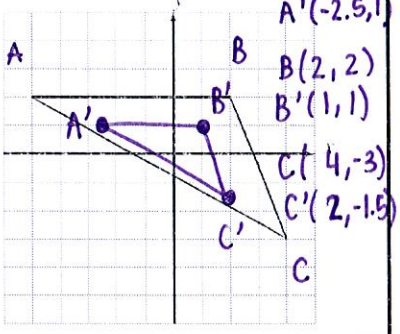
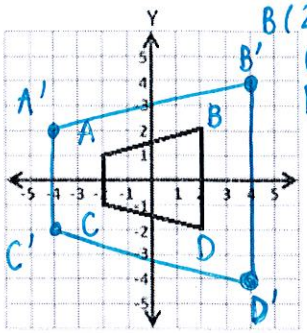
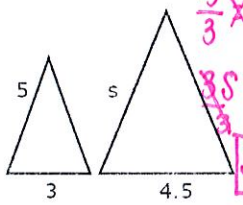
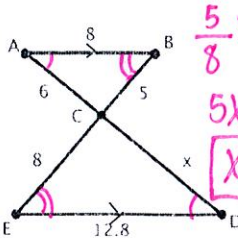
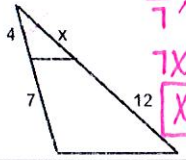
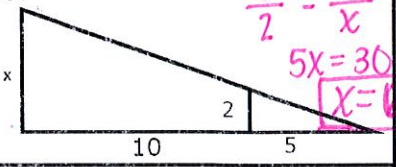
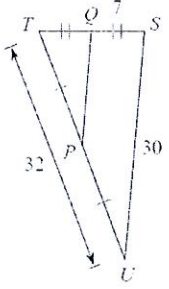
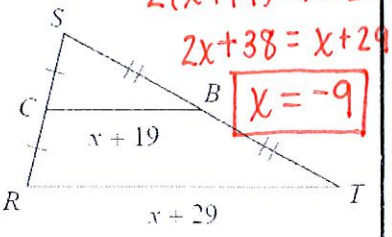
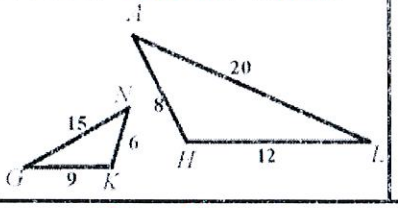
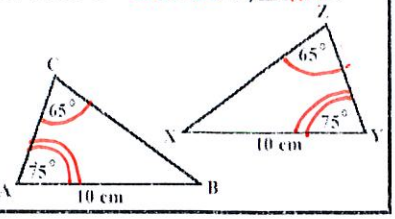
Name _____ Date _____

UNIT 3 TEST REVIEW

Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

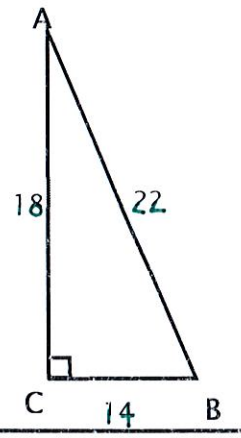
Topic	Things to remember	Examples
A. Perform a dilation with a given scale factor	When the center of dilation is the origin, you can multiply each coordinate of the original figure, or pre-image, by the scale factor to find the coordinates of the dilated figure, or image.	1. Dilate with k = ½. A(-5,2) A'(-2.5,1) B(2,2) B'(1,1) C(4,-3) C'(2,-1.5)  2. Dilate with k = 2. A(-2,1) A'(-4,2) B(2,2) B'(4,4) C(-2,-1) C'(-4,-2) D(2,-2) D'(4,-4) 
B. Find the missing side for similar figures.	Set up a proportion by matching up the corresponding sides. Then, solve for x.	3. $\frac{5}{3} \times \frac{s}{4.5}$ $3s = 22.5$ $s = 7.5$  4. $\frac{5}{8} \times \frac{6}{x}$ $5x = 48$ $x = 9.6$  5. $\frac{4}{7} \times \frac{x}{12}$ $7x = 48$ $x = 6.86$  6. $\frac{5}{2} = \frac{15}{x}$ $5x = 30$ $x = 6$ 
C. Midsegment Theorem	The segment connecting the midpoints of two sides of the triangle is parallel to the third side and 1/2 the length of the third side.	5. Find PQ and TP PQ = 15 TP = 16  6. Solve for x. $2(x+19) = x+29$ $2x+38 = x+29$ $x = -9$ 
D. Determine if 2 triangles are similar, and write the similarity statement.	Remember the 3 ways that you can do this: AA, SAS, SSS	7. ΔGNK ~ ΔLAH by SSS~  8. ΔABC ~ ΔYXZ by AA~ 

$\frac{8}{6} = \frac{12}{9} = \frac{20}{15}$

$\frac{4}{3} = \frac{4}{3} = \frac{4}{3}$ ✓

E. Find sin, cos, and tan ratios

Just find the fraction using SOHCAHTOA



9. Find sin A. $14/22 =$ $7/11$

10. Find tan B. $18/14 =$ $9/7$

11. Find cos B. $14/22 =$ $7/11$

12. Find tan A. $14/18 =$ $7/9$

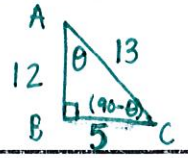
F. Know the relationship between the ratios for complementary angles.

$\sin\theta = \cos(90-\theta)$

$\cos\theta = \sin(90-\theta)$

$\tan\theta = \dfrac{1}{\tan(90-\theta)}$

13. Given Right ΔABC and $\sin\theta = 5/13$, find $\sin(90-\theta)$ *and* $\cos(90-\theta)$. $a^2+5^2=13^2 \rightarrow a=12$



$\sin(90-\theta) = 12/13$

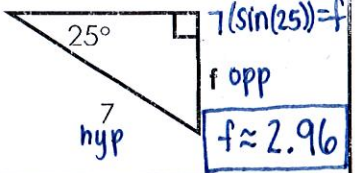
$\cos(90-\theta) = 5/13$

G. Use trig to find a missing side measure

Set up the ratio and then use your calculator.

If the variable is on the top, multiply.
If the variable is on the bottom, divide.

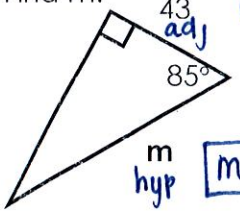
14. Find f. $\sin(25) = \frac{f}{7}$



$7(\sin(25)) = f$

$f \approx 2.96$

15. Find m. $\cos(85) = \frac{43}{m}$



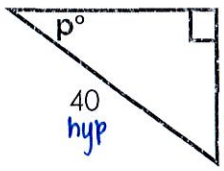
$m = \frac{43}{\cos(85)}$

$m \approx 493.37$

H. Use trig to find a missing angle measure

Tap the trig button twice to get the INVERSE then type in the ratio.

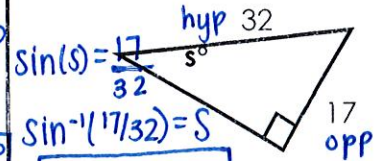
16. Find p. $\sin(p) = \frac{13}{40}$



$\sin^{-1}(\frac{13}{40}) = p$

$p \approx 18.97°$

17. Find s. $\sin(S) = \frac{17}{32}$



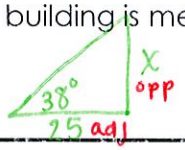
$\sin^{-1}(17/32) = S$

$S \approx 32.09°$

I. Trig Word Problems

Draw the picture.
Label the sides.
Set up the ratio, and solve.

18. From 25 feet away from the base of a building, the angle of elevation from the ground to the top of a building is measured to be 38°. How tall is the building?

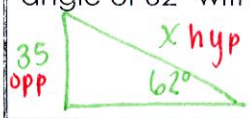


$\tan(38) = \frac{x}{25}$

$25(\tan(38)) = x$

$x \approx 19.53$ ft

19. A kite is 35 feet in the air and the string forms an angle of 62° with the ground. How long is the string?

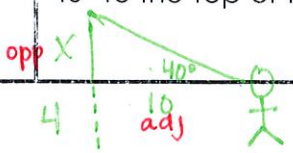


$\sin(62) = \frac{35}{x}$

$x = 35/\sin(62)$

$x \approx 39.64$ ft

20. Lucy, whose eye level is 4 feet from the ground, stands 10 feet away from the base of a tree. From her line of sight, she is looking at an angle of elevation of 40° to the top of the tree. How tall is the tree?



$\tan(40) = \frac{x}{10}$

$10(\tan(40)) = x$

$x \approx 8.39$

Tree $= 8.39 + 4 = 12.39$

The tree is 12.39 ft tall.