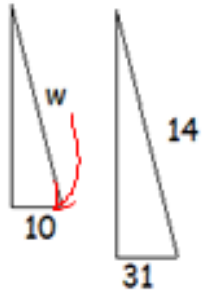
2nd Tri-Test Study Guide
Geometry

Name_____ Period_____

Write an algebraic equation for each problem, then solve it. Show all work.

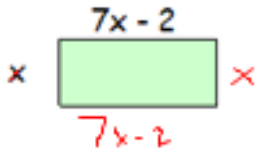
1) Consider these similar triangles. Solve for x.



$\frac{w}{10} = \frac{14}{31}$

$w = \frac{140}{31}$

2) The perimeter of the rectangle is 58 cm. What is the value of x?



$16x - 4 = 58$

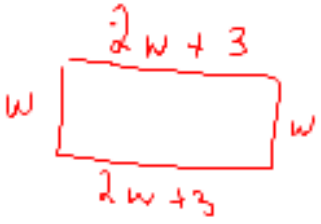
$+4 \quad +4$

$\frac{16x}{16} = \frac{62}{16}$

$x = 3.9$

Find the value of the variable given the perimeter of each rectangle. Write the equation and solve. DRAW A PICTURE!

3) The length of a rectangle is three more than two times its width. The perimeter is 100 cm.



$6w + 6 = 100$

$-6 \quad -6$

$\frac{6w}{6} = \frac{94}{6}$

$w = 15.7$

4) The width of a rectangle is six less than one fourth its length. The perimeter is 50 meters.

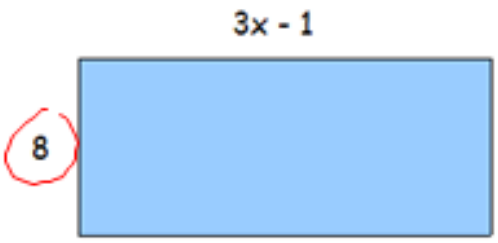
$2.5\ell - 12 = 50$

$\frac{5}{2}\ell - 12 = 50$

$\frac{2.5\ell}{2.5} = \frac{62}{2.5}$

$\ell = 24.8$

5) Find the sides of the rectangle. The area is 136 ft squared.



$A = \ell w$

$8(3x-1) = 136$

$24x - 8 = 136$

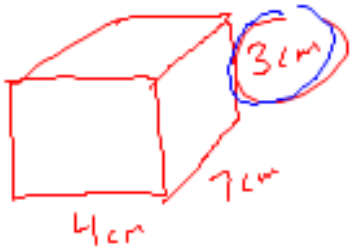
$+8 \quad +8$

$24x = 144$

$x = 6$

Side 1	Side 2
8 ft	17 ft

6) A box has the dimensions of 3 cm, 4 cm and 7 cm.
   a. Draw a picture.
   b. Find the volume.
   c. Increase the 3 cm side to 6 cm.
   d. Find the volume of the new box.



$V = \ell w h$

$= 4 \cdot 7 \cdot 3$

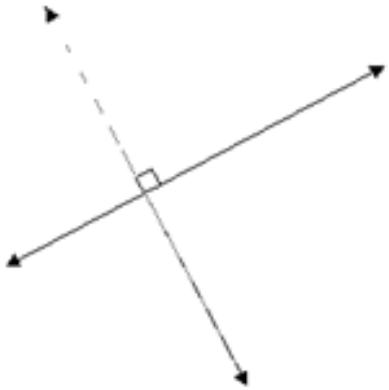
(b) $= 84 cm^3$

$V = \ell w h$

$= 4 \cdot 7 \cdot 6$

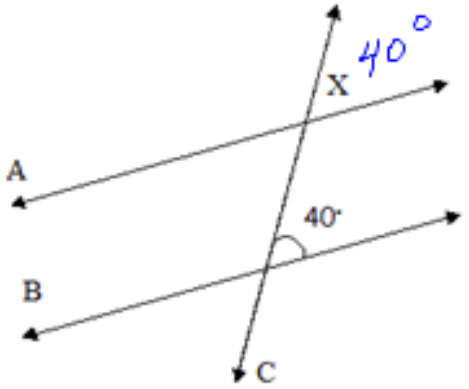
$= 168 cm^3$

7) Explain why these lines are perpendicular.

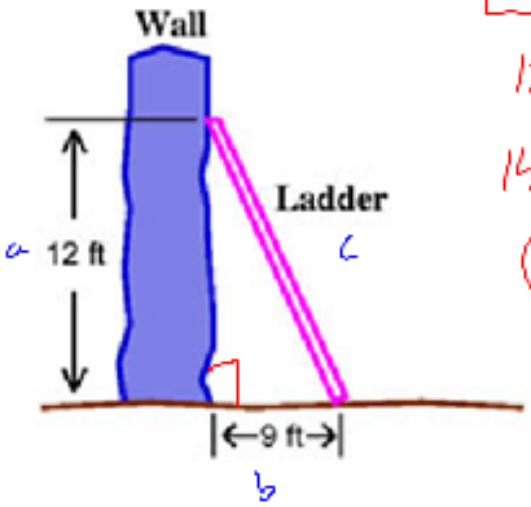


because the lines intersect at a 90° angle.

8) Lines A and B are parallel. What is the angle of $\angle X$?



9) Use the Pythagorean Theorem to calculate ~~the length of the ladder~~.



$a^2 + b^2 = c^2$

$12^2 + 9^2 = c^2$

$144 + 81 = c^2$

$225 = c^2$

$c = 15$ ft

$225 \cdot \sqrt{\sqrt{}}$

10) If you flip the triangle over the x-axis, what are the new coordinates of the corners of the triangle?