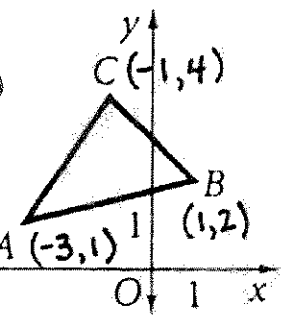


# Unit 1 Test Review Homework

For exercises 1-6, use  $\triangle ABC$ . Write the coordinates of each image, then write its algebraic rule. Show work on separate graph paper, as needed.

- a dilation four times the original size  
 $A'(-12, 4), B'(4, 8), C'(-4, 16); (x, y) \rightarrow (4x, 4y)$
- a rotation of  $90^\circ$   
 $A'(-1, -3), B'(-2, 1), C'(-4, -1); (x, y) \rightarrow (-y, x)$
- a rotation of  $180^\circ$   
 $A'(3, -1), B'(-1, -2), C'(1, -4); (x, y) \rightarrow (-x, -y)$
- a translation 2 units left and 3 units down  
 $A'(-5, -2), B'(-1, -1), C'(-3, 1); (x, y) \rightarrow (x-2, y-3)$
- a reflection in the x-axis  
 $A'(-3, -1), B'(1, -2), C'(-1, -4); (x, y) \rightarrow (x, -y)$
- a reflection over  $y = -x$   
 $A'(-1, 3), B'(-2, -1), C'(-4, 1); (x, y) \rightarrow (-y, -x)$



Given the similar triangles shown, determine the scale factor and write a similarity statement.

7.  $\frac{3}{6} = \frac{3.1}{6.2}$   
 $\triangle XYZ \sim \triangle TRS$   $SF=2$

8.  $\triangle RTS \not\sim \triangle NAG$   
  
 $\frac{10}{12} \neq \frac{15}{17} \neq \frac{20}{22}$

If  $\triangle PGJ \sim \triangle PQR$ , determine the values of  $x$  and  $y$ .

9.  $PJ = 6$   
 $JG = 5$   
 $PG = 4$   
 $GQ = x$   
 $RQ = x + 6$   
 $JR = y$
10.  $RQ = 10$   
 $JG = 8$   
 $JR = x$   
 $PJ = 2x + 1$   
 $PG = 2y$   
 $PQ = 5y - 2$

$$\frac{6}{6+y} = \frac{5}{x+6}$$

$$\frac{6}{6+y} = \frac{5}{6+y+10}$$

$$60 = 30 + 5y$$

$$30 = 5y$$

$$y = 6$$

$$\frac{8}{10} = \frac{2y}{5y-2}$$

$$40y - 16 = 20y$$

$$20y = 16$$

$$y = \frac{16}{20}$$

$$y = \frac{4}{5}$$

11. If  $AD = 12$  and  $AC = 4y - 36$ , find  $y$ ,  $AC$  and  $DC$ .

$$24 = 4y - 36$$

$$60 = 4y$$

$$y = 15$$

$$AC = 4(15) - 36$$

$$AC = 24$$

$$DC = 12$$

12. Given  $m\angle AOC = 7x - 2$ ,  $m\angle AOB = 2x + 8$ , and  $m\angle BOC = 3x + 14$ , find  $m\angle AOC$ .

$$7x - 2 = 2x + 8 + 3x + 14$$

$$7x - 2 = 5x + 22$$

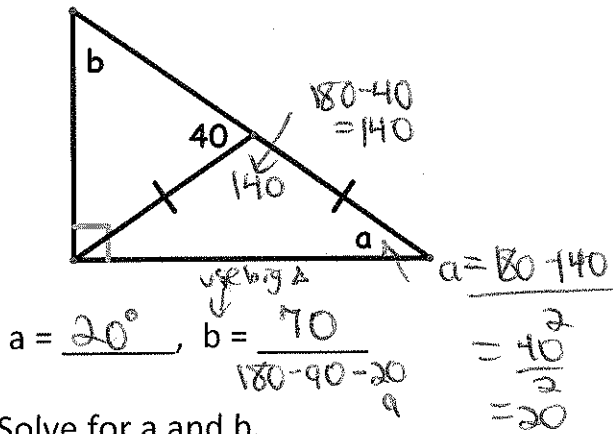
$$2x = 24$$

$$x = 12$$

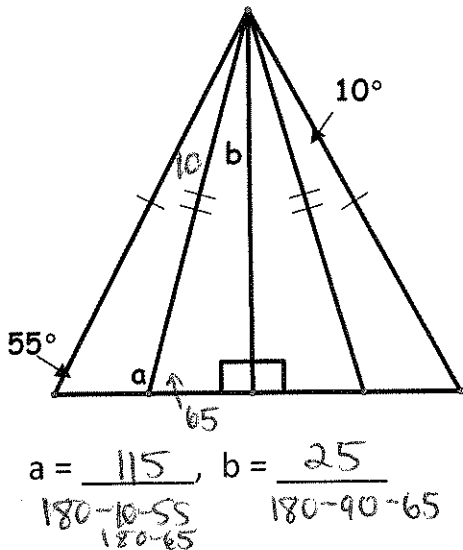
$$m\angle AOC = 7(12) - 2 = 84 - 2$$

$$m\angle AOC = 82$$

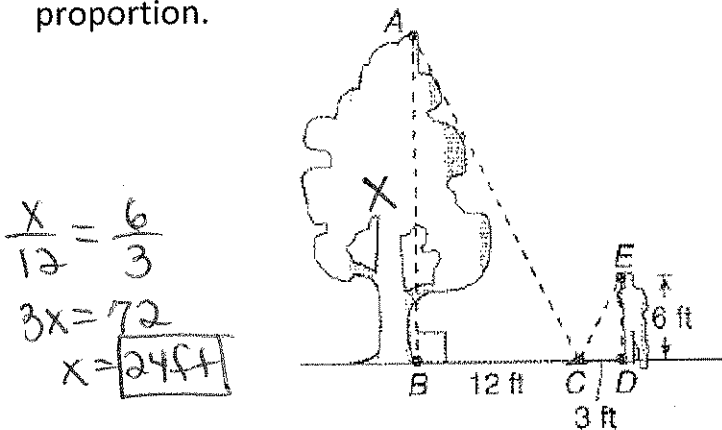
13. Solve for a and b.



14. Solve for a and b.



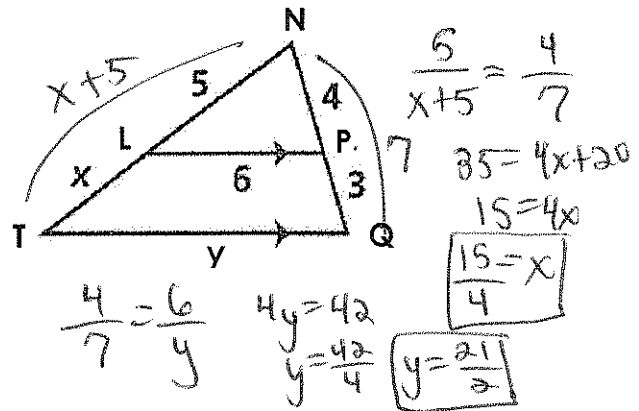
15. Find the height of the tree using a proportion.



16. Specifically describe a single translation that has the same effect as the composition:  $\langle 6, 5 \rangle$  followed by  $\langle -4, 5 \rangle$ .

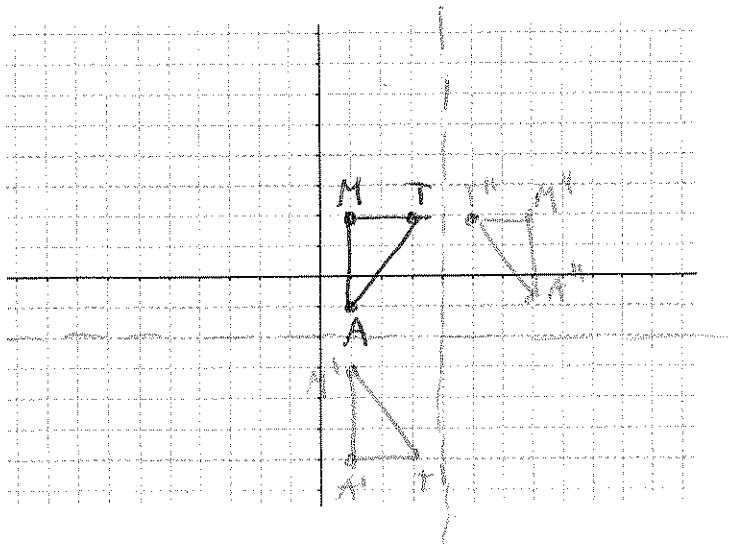
translation  $\langle 2, 10 \rangle$   
 right 2, up 10

17.  $\triangle TNQ \sim \triangle LNP$ . Find x and y.

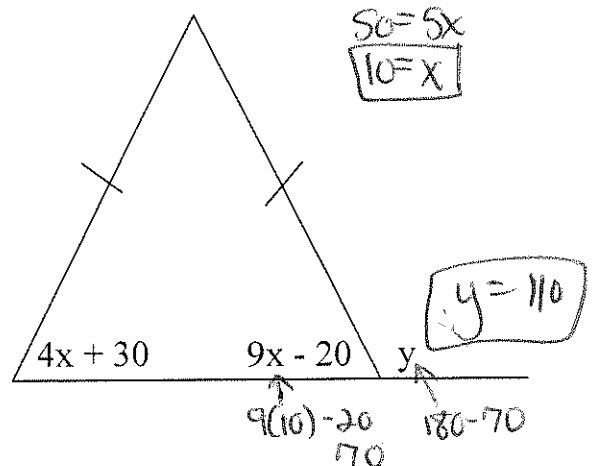


18. Given points M(1, 2), A(1, -1), and T(3, 2),

- Draw and Label  $\triangle MAT$ .
- Draw the reflection of  $\triangle MAT$  across the line  $y = -2$ . Label this  $\triangle M'A'T'$ .
- Draw the reflection of  $\triangle MAT$  across the line  $x = 4$ . Label this  $\triangle M''A''T''$ .



19. Find x and y.



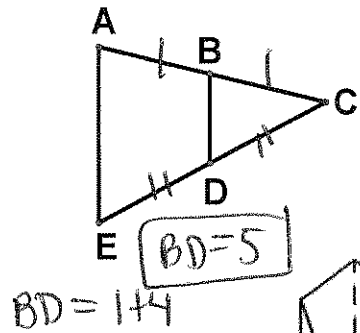
20. Find the length of BD given that  
 $AE = 4x + 6$  and  $BD = x + 4$ . B is the  
midpoint of AC and D is the midpoint of CE.

$$BD = \frac{1}{2} AE \quad 2(x+4) = 4x+6$$

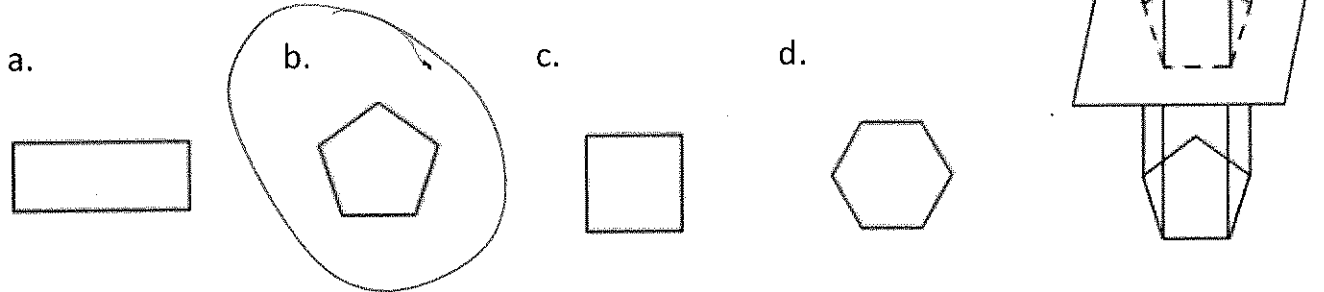
$$\text{or} \quad 2x+8 = 4x+6$$

$$2BD = AE \quad 2 = 2x$$

$$\quad \quad \quad x = 1$$



21. Find the type of the cross section when a plane parallel to the base passes through the prism shown.



Can the triangles be proven congruent? If so, write the congruence statement and state which postulate can be used to prove them congruent.

22.  $\triangle EGF \cong \triangle HGF$  by ASA

23.  $\overline{BE}$  bisects  $\overline{AD}$ ,  $\overline{BC} \cong \overline{CE}$   
 $\triangle ABC \cong \triangle DEC$  by SAS

24.  $\overline{AD} \cong \overline{CD}$   
 $\triangle ABD \cong$  NOT POSSIBLE by \_\_\_\_\_

25. R is the midpoint of  $\overline{QS}$   
 $\overline{PQ} \cong \overline{PS}$   
 $\triangle PQR \cong \triangle PSR$  by SSS