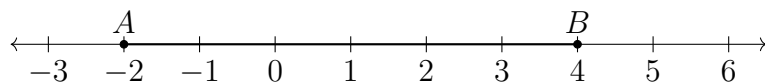


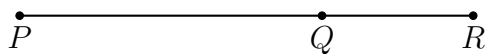
## 2.6 PreTest: Solving for length and angle measures

1. Two points  $A(-2)$ ,  $B(4)$  and the segment  $\overline{AB}$  are shown on the number line.

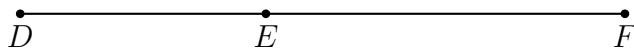


What is the length of the segment  $\overline{AB}$ ? Show your work as an equation.

2. Given  $\overline{PQR}$ ,  $PQ = 4\frac{3}{4}$ , and  $QR = 2\frac{1}{2}$ . Find  $PR$ .



3. Given  $\overline{DEF}$ ,  $DE = 2x + 4$ ,  $EF = x + 12$ ,  $DF = 25$ . Find  $DE$ .

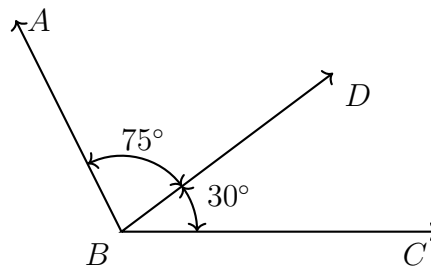


4. Apply the Angle Addition postulate. Write an equation to support your work.

Given  $m\angle ABD = 75^\circ$  and

$m\angle DBC = 30^\circ$ .

Find  $m\angle ABC$ .

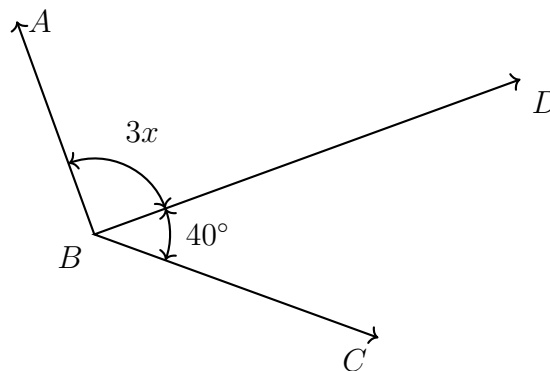


5. Given the angle measures and situation shown, write an equation and solve for  $x$ .

$m\angle ABD = 3x$

$m\angle DBC = 40^\circ$

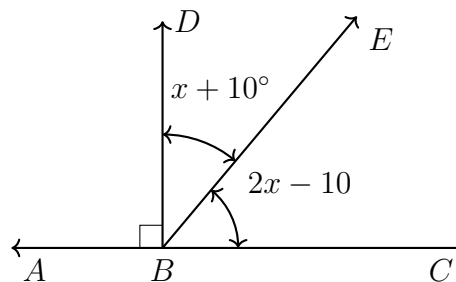
$m\angle ABC = 130^\circ$



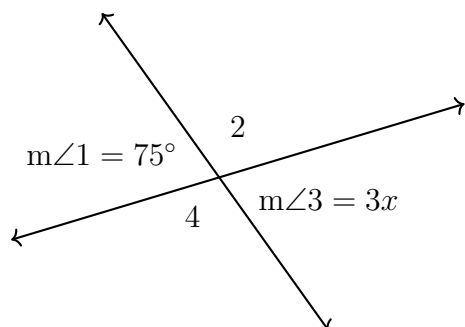
6. Given the angle measures and perpendicular situation shown,  $\overrightarrow{BD} \perp \overrightarrow{AC}$ . Find  $x$ .

$m\angle DBE = x + 10^\circ$

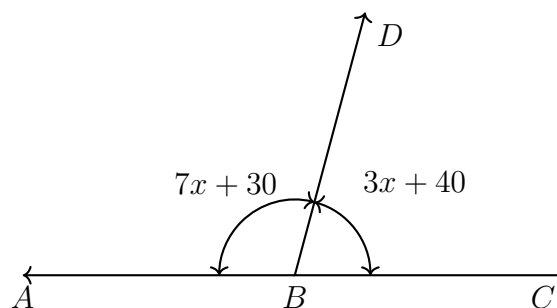
$m\angle EBC = 2x - 10^\circ$



7. Two lines intersect with  $m\angle 1 = 75^\circ$  and  $m\angle 3 = 3x$ . Find  $x$ .

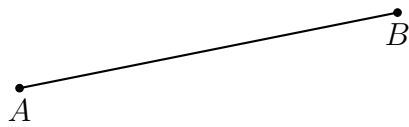


8. A linear pair have measures  $m\angle ABD = 7x + 30^\circ$  and  $m\angle DBC = 3x + 40^\circ$ .  
Find  $m\angle ABD$ . Check your answer.

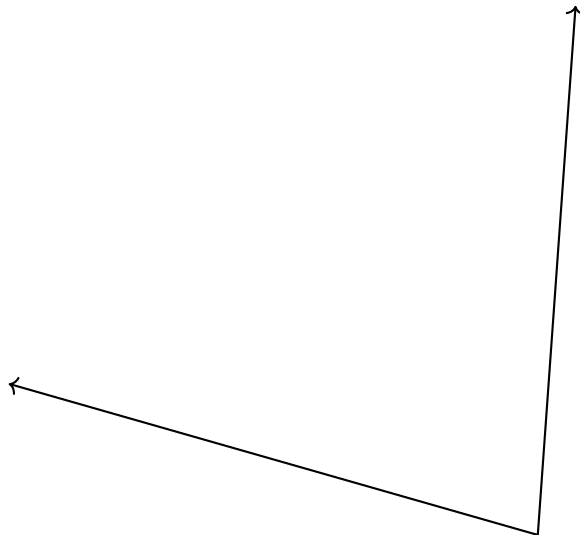


9. Triangle  $ABC$  has angle measures  $m\angle A = 50^\circ$ ,  $m\angle B = 70^\circ$ . Find the measure of the third angle,  $m\angle C$ .

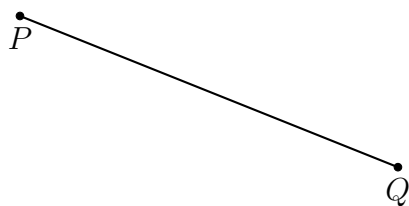
10. Construct an equilateral triangle with one side  $\overline{AB}$ .



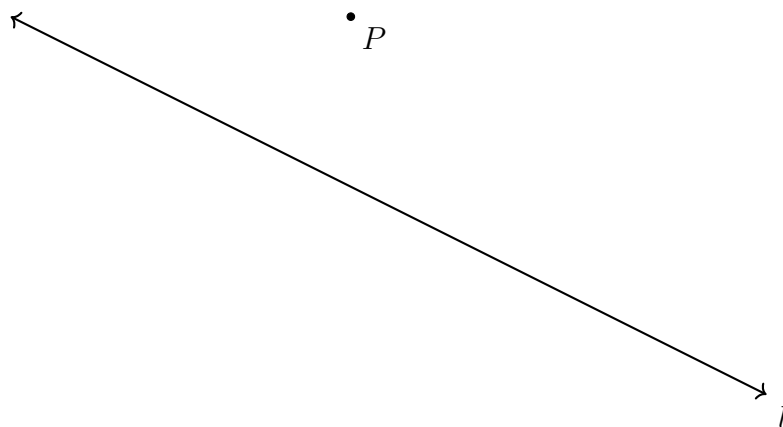
11. Construct an angle bisector of the given angle.



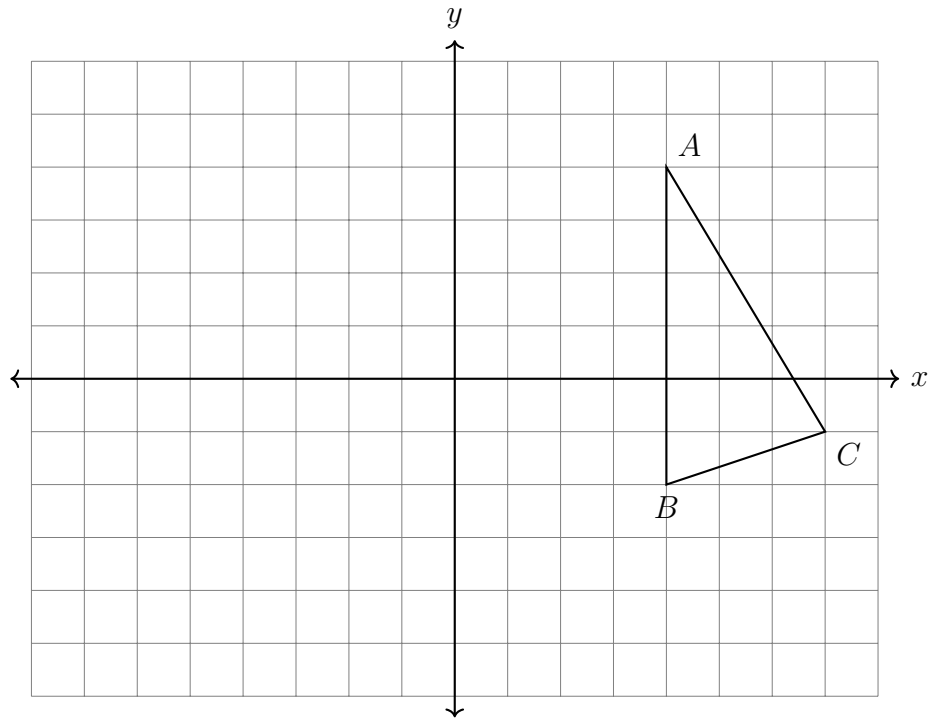
12. Construct a perpendicular bisector of  $\overline{PQ}$ .



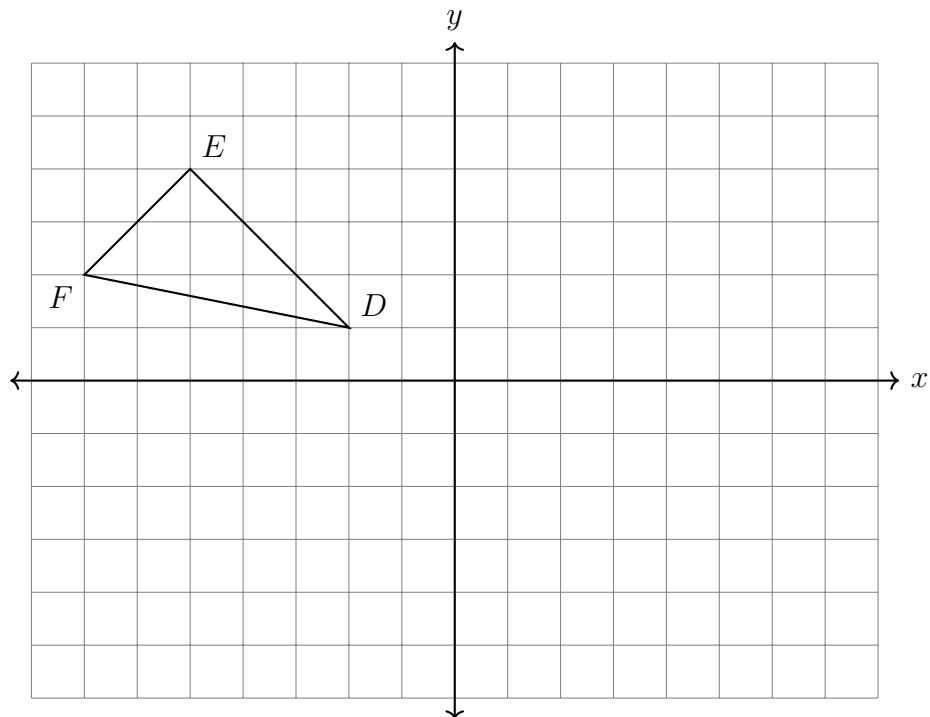
13. Construct a perpendicular to line  $l$  through the point  $P$ .



14. Translate  $\triangle ABC$  left seven and up one unit. Label the image  $\triangle A'B'C'$ .



15. Reflect  $\triangle DEF$  across the  $x$ -axis, labeling the image  $\triangle D'E'F'$ .

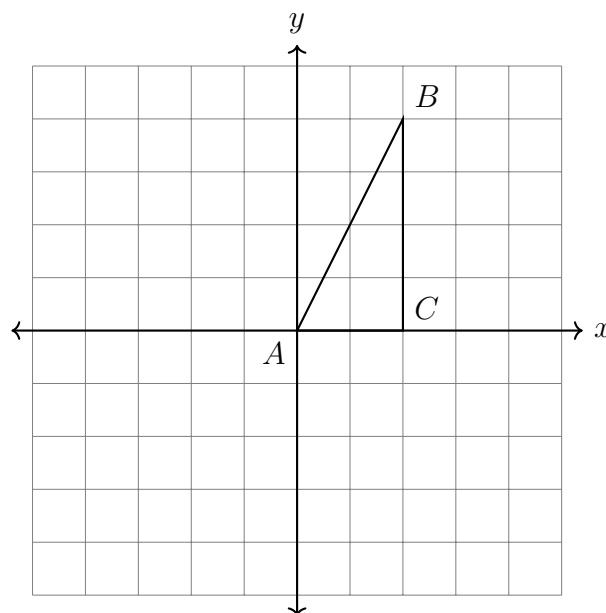


16. Rotate the triangle  $90^\circ$  clockwise around the origin,  $\triangle ABC \rightarrow \triangle A'B'C'$ . Complete the table of the coordinates and plot and label the image on the grid.

$A(0, 0) \rightarrow$

$B(2, 4) \rightarrow$

$C(2, 0) \rightarrow$



17. Triangle  $X'Y'Z'$  is the image of triangle  $XYZ$  after a translation. Which triangle is larger, or are they the same size? Justify your answer.
18. A reflection maps  $P(-5, 3)$  onto  $P'(5, 3)$ . Is the reflection across the  $x$ -axis or the  $y$ -axis?
19. Specify the translation that maps  $Q(-1, 2) \rightarrow Q'(6, -5)$ .

20. Simplify each expression by combining like terms.

(a)  $7x + 5 - 2x + 3$

(c)  $5 + 5\pi + 7 - 3\pi$

(b)  $-5y^2 - 4y + 8y + y^2$

(d)  $12x - 7 + 4\sqrt{5} + 2\sqrt{5}$

21. Use the function  $f(x) = 8x - 3$  to answer the questions.

(a) What is  $f(0)$ ?

(c) What is  $x$  when  $f(x) = 69$ ?

(b) Find  $f(\frac{1}{4})$

22. Solve each equation for  $x$ . Then check your answer.

(a)  $2x + 7x + 13 = 31$

(b)  $5x - 7 = 8x + 14$

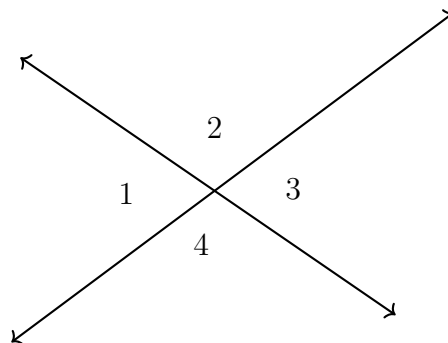


23. As shown below, two lines intersect making four angles:  $\angle 1$ ,  $\angle 2$ ,  $\angle 3$ , and  $\angle 4$ .

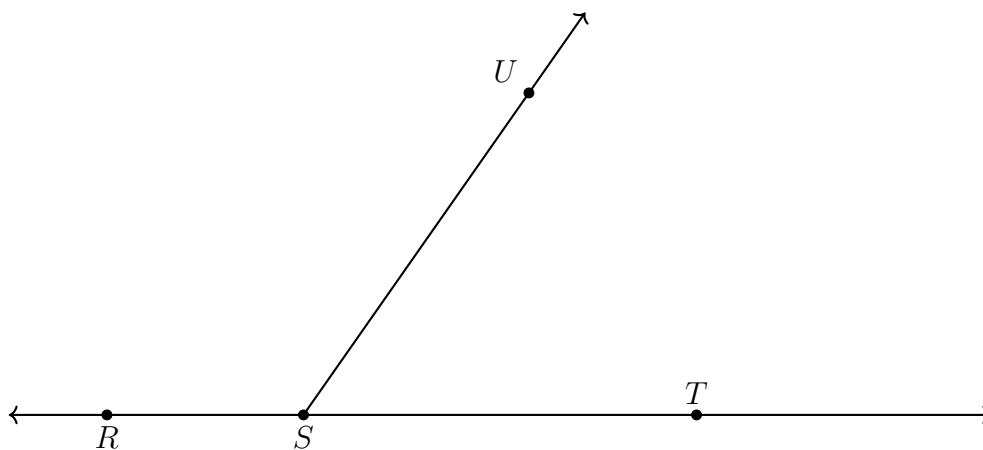
Given  $m\angle 1 = 70^\circ$ .

(a) Find  $m\angle 3$

(b) Find  $m\angle 4$



24. Given that the  $m\angle UST = 55^\circ$ . Find the  $m\angle RSU$



25. Given two parallel lines, two transversals, and angle measures as marked.

Find  $x$ ,  $y$ ,  $z$

