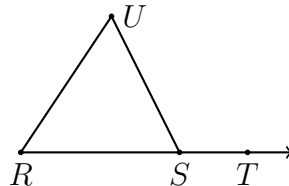


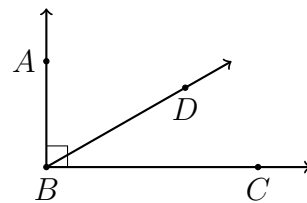
## Part 2, Principles of Geometry: Angle Measures & Relationships

Use the postulates and theorems you have learned. You may abbreviate them as follows: “def. of bisector,” “ $\perp$  rays meet at  $90^\circ$ ,” “complementary  $\angle$ s add to  $90$ ,” “linear pairs add to  $180$ ,” “vertical  $\angle$ s are  $\cong$ ,” “corresponding  $\angle$ s of parallel lines are  $\cong$ .”



9. Given  $m\angle R = m\angle U = 65$ , and  $m\angle UST = 130$ . Find  $m\angle RSU$ .

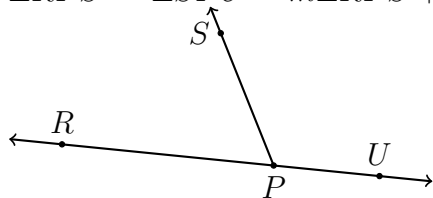
$$\angle UST \cong \angle RSU \quad m\angle UST + m\angle RSU = 180 \quad \underline{\hspace{2cm}}$$



10. Given  $\overrightarrow{BA} \perp \overrightarrow{BC}$ ,  $m\angle ABD = 2x - 5$ , and  $m\angle DBC = x - 10$ .

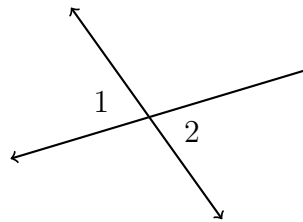
$$\angle ABD \cong \angle DBC \quad m\angle ABD + m\angle DBC = 90 \quad \underline{\hspace{2cm}}$$

11.  $\angle RPS \cong \angle SPU \quad m\angle RPS + m\angle SPU = 180^\circ \quad \underline{\hspace{2cm}}$



12. Given corresponding angles of a transversal and two parallel lines,  $\angle A$ ,  $\angle B$ .

$$\angle A \cong \angle B \quad m\angle A + m\angle B = 180^\circ \quad \underline{\hspace{2cm}}$$

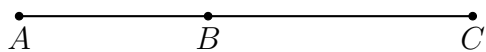


13. Given  $m\angle 1 = 4x + 6$ ,  $m\angle 2 = 6x - 32$ . Find  $m\angle 1$ .

$$\angle 1 \cong \angle 2 \quad m\angle 1 + m\angle 2 = 180 \quad \underline{\hspace{2cm}}$$

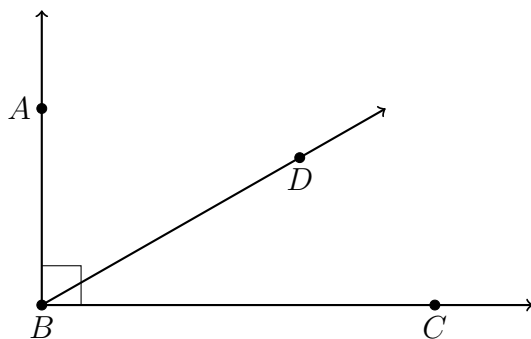
14. Given  $\overline{ABC}$ ,  $AC = 18$ , and the point  $B$  partitions  $\overline{AC}$  in a ratio of 2:7.

Find  $AB$ .



15. Given  $\overrightarrow{BA} \perp \overrightarrow{BC}$ ,  $m\angle ABD = 4x$ , and  $m\angle DBC = 2x - 12$ . Find  $m\angle DBC$ .

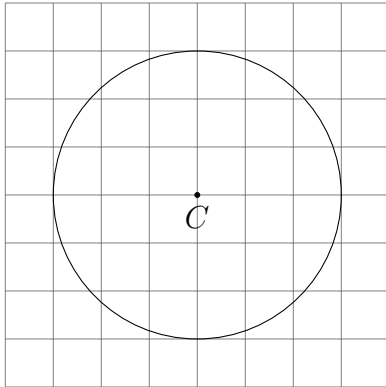
For full credit, show the check using both angle measures.



16. Given  $P(3, 4)$  and  $Q(7, 1)$ , find the length of  $\overline{PQ}$ .

17. Given the circle  $C$  with circumference  $6\pi$ .

- (a) Write down the formula for the circumference of a circle and solve for the radius yielding a circumference of  $6\pi$ .
- (b) Find the area of the circle.



18. On the graph, draw polygon ABCDEF with vertices A(1, 1), B(1, 4), C(3, 4), D(3, 7), E(8, 7), and F(8, 1). Find the perimeter and the area of the polygon.

