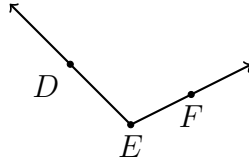


Name: \_\_\_\_\_

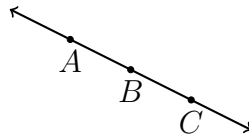
### 2.3 Homework: Angle addition

1. The size of an angle is its “measure,” which can be from  $0^\circ$  to  $360^\circ$

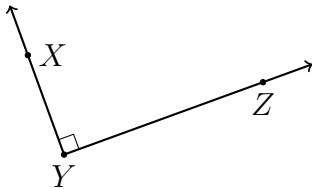
(a) Write down the name of this angle. Start with a less-than sign “ $<$ ”



(b) What is the degree measure made by these two opposite rays,  $\overrightarrow{BA}$  and  $\overrightarrow{BC}$ ?



(c) What is the degree measure of the angle,  $m\angle XYZ$ ?



2. Type your answers. Use the less than key (“ $<$ ”) to represent an angle, followed by three letters.

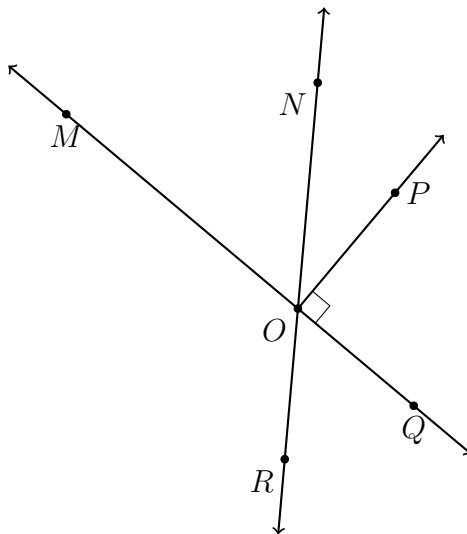
(a) Name the ray opposite to  $\overrightarrow{OR}$ : \_\_\_\_\_

(b) What is the measure of  $\angle POM$ ? \_\_\_\_\_

(c) Name a right angle: \_\_\_\_\_

(d) Name the angle vertical to  $\angle QOR$ : \_\_\_\_\_

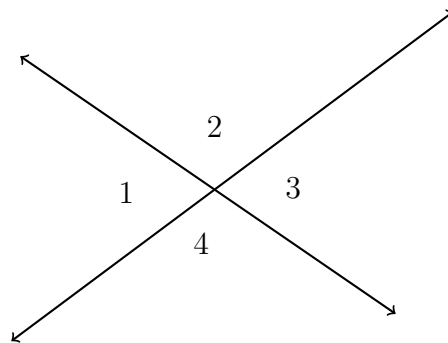
(e) Spicy: Are  $\angle NOP$  and  $\angle QOR$  complementary, supplementary, or neither?



3. 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  $m\angle 3$



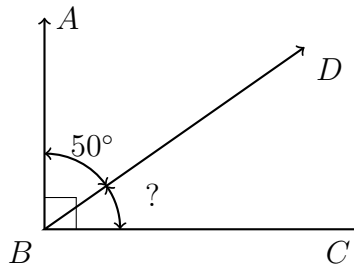
(b) Find  $m\angle 4$

### Angle addition situations

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

Given  $m\angle ABD = 50^\circ$ ,  $m\angle ABC = 90^\circ$ .

Find  $m\angle DBC$ .



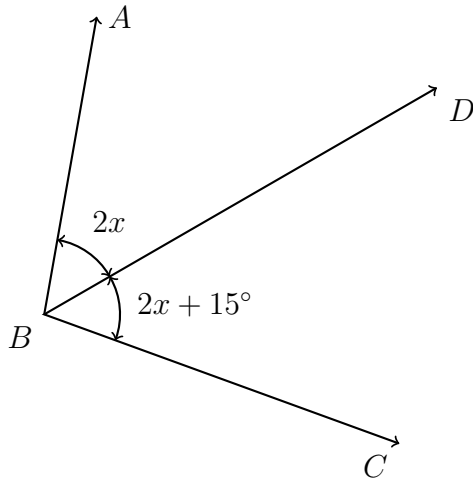
5. Given the angle measures and situation shown, write an equation and solve for  $x$ .

$$m\angle ABD = 2x$$

$$m\angle DBC = 2x + 15^\circ$$

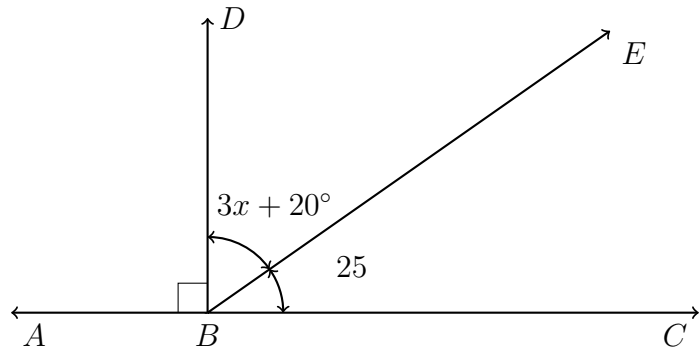
$$m\angle ABC = 115^\circ$$

Name:



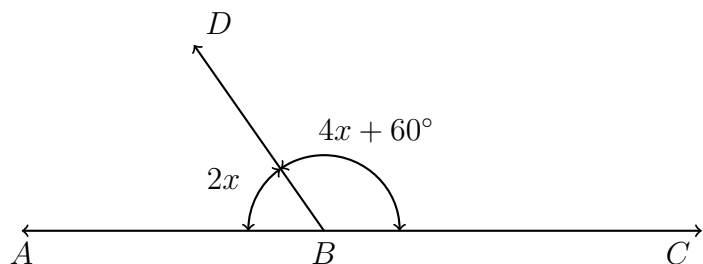
6. The ray  $\overrightarrow{BD}$  makes a  $90^\circ$  angle with the line  $\overleftrightarrow{ABC}$ , and  $m\angle DBE = 3x + 20^\circ$ ,  $m\angle EBC = 25^\circ$ .

Find  $x$ , writing an equation to support your work.



7. Two supplementary angles have measures  $m\angle ABD = 2x$  and  $m\angle DBC = 4x + 60^\circ$ .

Write an equation, then find  $x$ .

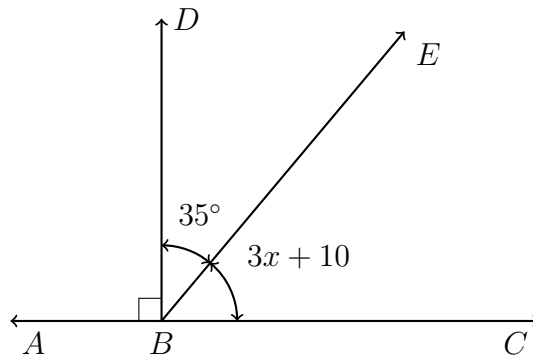


8. Given the perpendicular situation shown,  $\overrightarrow{BD} \perp \overleftrightarrow{ABC}$  and angle measures given.

Find  $x$ .

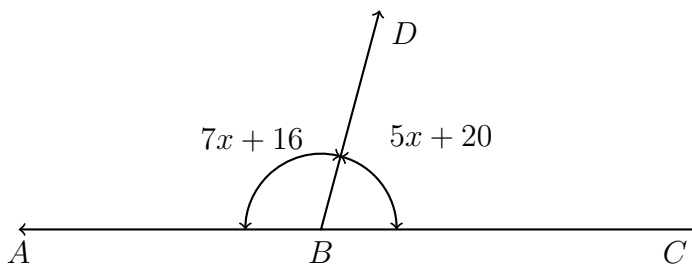
$$m\angle DBE = 35^\circ$$

$$m\angle EBC = 3x + 10^\circ$$



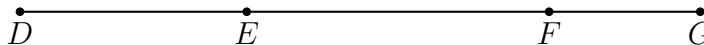
9. A linear pair have measures  $m\angle ABD = 7x + 16^\circ$  and  $m\angle DBC = 5x + 20^\circ$ .

Find  $m\angle ABD$ .



10. Given  $\overline{DEFG}$ ,  $DE = 3\frac{1}{4}$ ,  $EF = 6\frac{1}{4}$ , and  $FG = 1\frac{3}{4}$ . (diagram not to scale)

Find  $DG$ , expressed as a fraction, not a decimal.



11. Given  $P(-2.4)$  and  $Q(1.8)$ , as shown on the number line.

Find the length of the line segment  $\overline{PQ}$ . State an equation for full credit.

