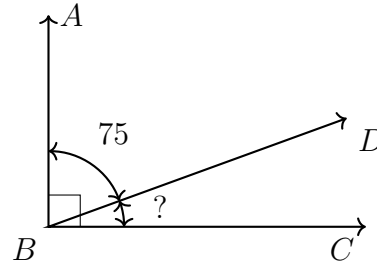


Name:

### 3.3 Homework: Mixed review

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

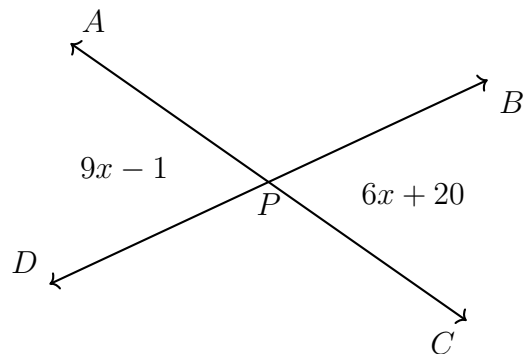
Given  $m\angle ABD = 75^\circ$ ,  $m\angle ABC = 90^\circ$ .



Find  $m\angle CBD$ .

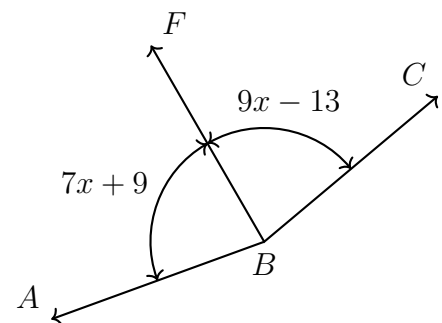
2. Given vertical angles,  $m\angle APD = 9x - 1$ ,  $m\angle BPC = 6x + 20$ , as shown.

Find  $x$ . Check your solution for full credit.



3. Ray  $\overrightarrow{BF}$  is the angle bisector of  $\angle ABC$ . Given that the angle measures are  $m\angle ABF = 7x + 9$  and  $m\angle CBF = 9x - 13$ .

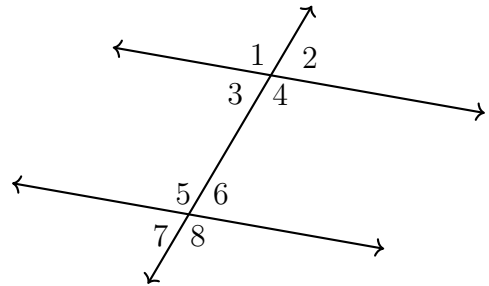
Find  $m\angle ABC$ .



2

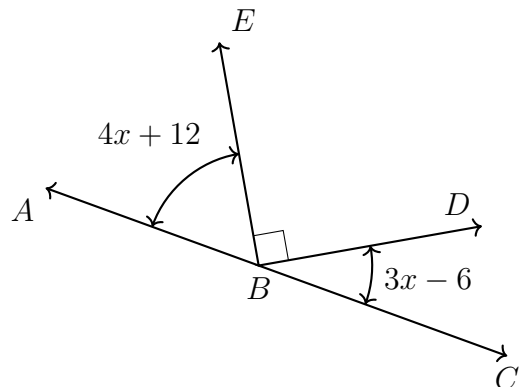
4. Find  $m\angle 1$  given two parallel lines and a transversal, with

$$m\angle 3 = 2x + 17 \quad m\angle 5 = 4x - 5$$



5. Given  $\overleftrightarrow{ABC}$ , right angle  $\angle DBE$ ,  $m\angle ABE = 4x + 12$ , and  $m\angle CBD = 3x - 6$ .

Find  $m\angle CBD$ .



6. Ray  $\overrightarrow{XL}$  is the angle bisector of  $\angle KXM$ . Given  $m\angle JXN = 2x + 3$ .

Find  $x$ .

