BECA / Dr. Huson / Geometry   1
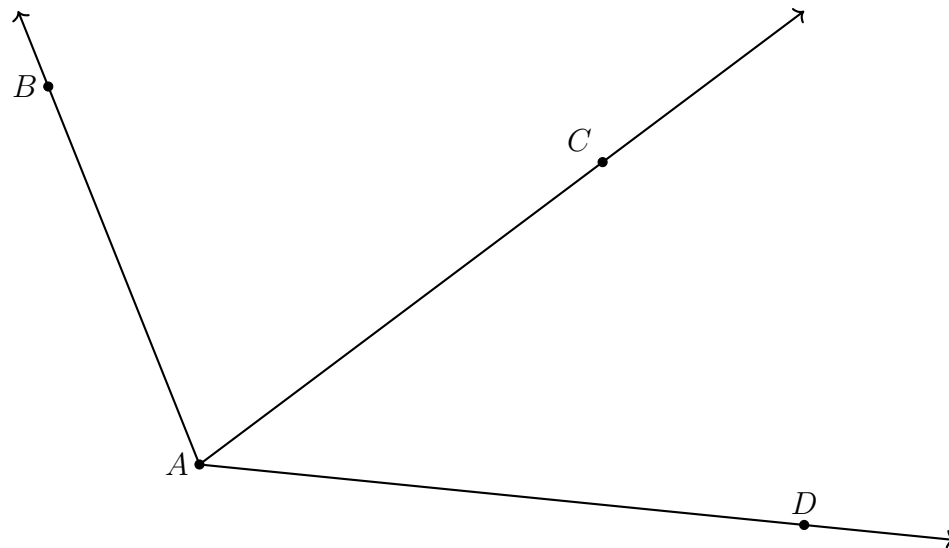Unit 2: Angles   Name:
29 Sept 2022

2.2 Classwork: Angle addition

1. Write down the name of the *three* angles shown in the diagram below and their angle measures, using your protractor.
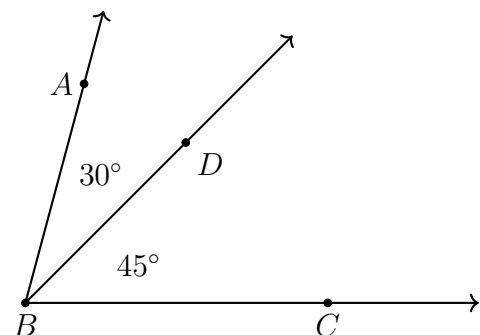

(a) _____

(b) _____

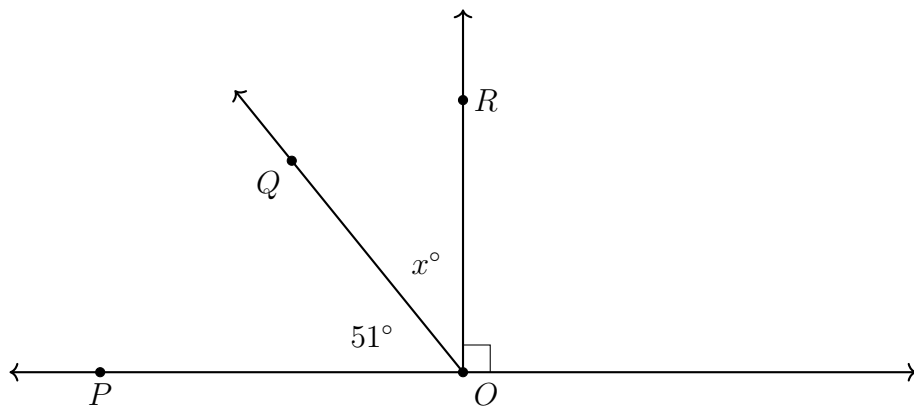(c) _____

(d) What do you notice about the angle measures?

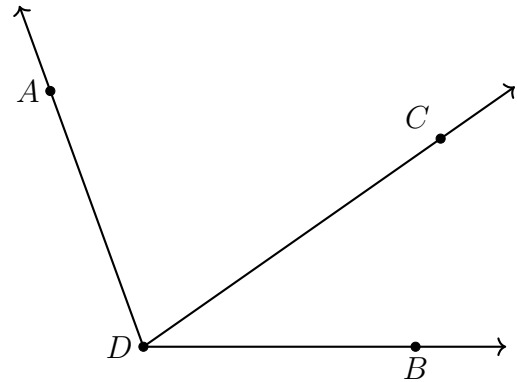2. m$\angle ABD = 30°$, m$\angle DBC = 45°$. Find m$\angle ABC$.

3. $\angle POQ$ and $\angle QOR$ are complementary angles. Given m$\angle POQ = 51°$, find m$\angle QOR$.

2

$x°$

$51°$

P

O

R

Q

4. Given m∠$ADB = 110°$, m∠$ADC = 75°$, and m∠$BDC = 3x + 5$. Find x.

    (a) Label the diagram.
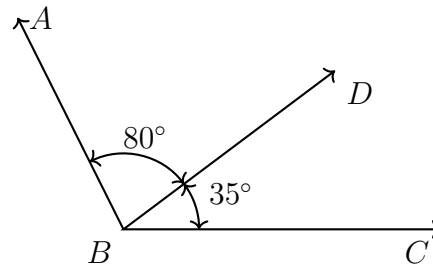
    (b) Write an equation.

    (c) Solve for x.

    (d) Check your answer

5. Apply the Angle Addition postulate. Write and equation to support your work.

    Given m∠$ABD = 80°$ and

    m∠$DBC = 35°$.

    Find $m∠ABC$.

6. Given the angle measures and situation shown, write an equation and solve for x.
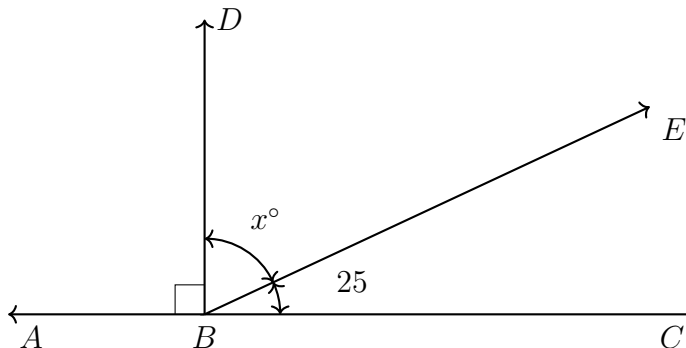
    m∠$ABD = 2x$

    m∠$DBC = 50°$

    $m∠ABC = 110°$
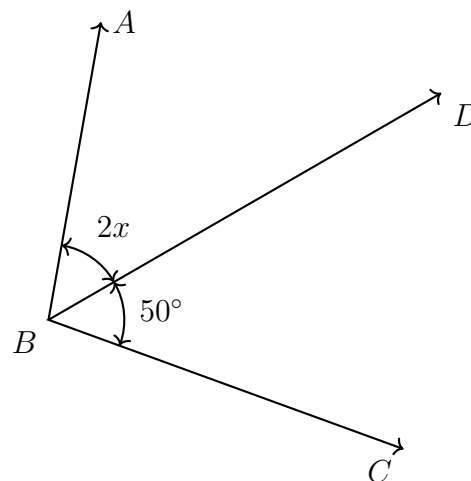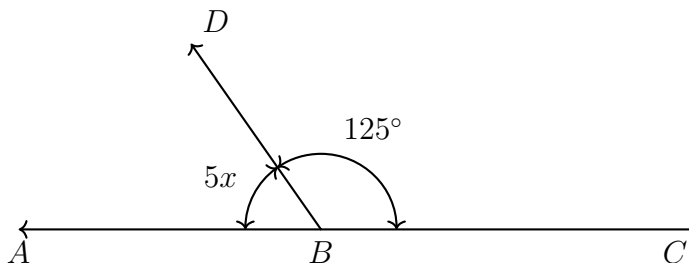
7. The ray $\overrightarrow{BD}$ makes a 90° angle with the line $\overleftrightarrow{ABC}$, and m∠$DBE = x°$, m∠$EBC = 25°$.

   Find x, writing and equation to support your work.

8. Two supplementary angles have measures m∠$ABD = 5x$ and m∠$DBC = 125°$.
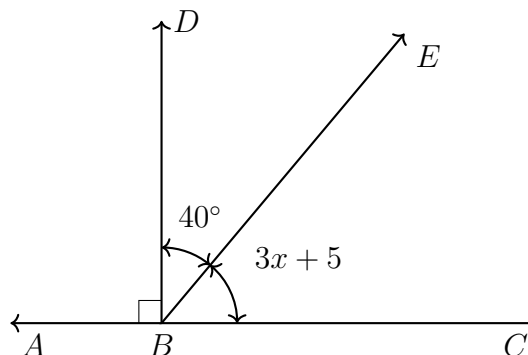
   Write an equation, then find x.

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

   Find x.

   m∠$DBE = 40°$

   m∠$EBC = 3x + 5°$

10. A linear pair have measures m∠$ABD = 7x + 16°$ and m∠$DBC = 5x + 20°$.

    Find m∠ABD.

$$D$$

$$7x + 16 \qquad 5x + 20$$

$$A \qquad\qquad B \qquad\qquad C$$