Name _____ Date _____

Point *E* is between *D* and *F* on $\overline{DF}$. Use the given information to write an equation in terms of *x*. Solve the equation. Then find *DE* and *EF*. *(Lesson 1.2)*
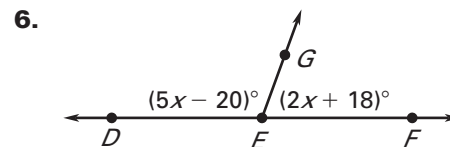
1. $DE = 5x - 3$
$EF = 3x + 5$
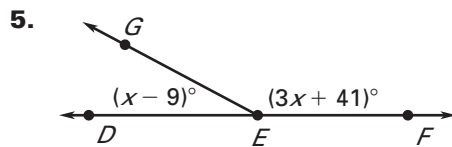$DF = 66$

2. $DE = 2x - 11$
$EF = x + 3$
$DF = 19$

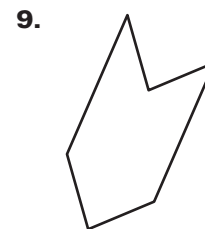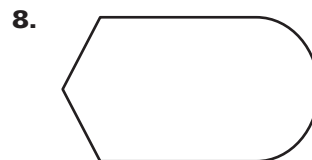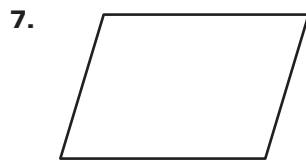**3.** $DE = 16 - x$
$EF = 3x$
$DF = 40$

4. **Segment Bisector** Line *AB* bisects $\overline{CD}$ at point *B*. Find *CD* if $BD = 5\frac{3}{8}$ inches. *(Lesson 1.3)*

Find $m\angle$ **DEG** and $m\angle$ **GEF**. *(Lesson 1.5)*

5.

$(x - 9)°$ $(3x + 41)°$
D   *E*   *F*

6.

$(5x - 20)°$ $(2x + 18)°$
D   *E*   *F*

Tell whether the figure is a polygon and whether it is *convex* or *concave*. *(Lesson 1.6)*

7.

8.

9.

A rectangular garden measures 17 meters by 24 meters. *(Lesson 1.7)*

10. What is the area of the garden?

11. How much fencing is needed to enclose the garden?

Describe the pattern in the numbers. Write the next number in the pattern. Graph the pattern on a number line. *(Lesson 2.1)*

12. 4, 9, 16, 25, . . .

13. 4, 40, 20, 200, 100, . . .

Decide whether the statement is *true* or *false*. If false, provide a counterexample. *(Lesson 2.2)*

**14.** If a polygon has three sides, then it is an equilateral triangle.

15. If a polygon is a quadrilateral, then it is a parallelogram.

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Name the property illustrated by the statement. *(Lesson 2.6)*

16. $\geq J \cong \geq J$

17. If $\overline{KL} \cong \overline{BC}$, then $\overline{BC} \cong \overline{KL}$.

18. If $\geq P \cong \geq R$ and $\geq R \cong \geq S$, then $\geq P \cong \geq S$.

19. If $\overline{YZ} \cong \overline{AN}$ and $\overline{AN} \cong \overline{QV}$, then $\overline{YZ} \cong \overline{QV}$.

In Exercises 20–22, use the picture of the basketball hoop. *(Lesson 3.1)*

20. Is the backboard perpendicular, parallel, or skew to the ground?

21. Is the plane containing the rim perpendicular, parallel, or skew to the backboard?

22. Is the plane containing the rim perpendicular, parallel, or skew to the ground?
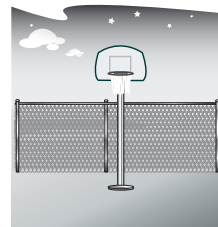
Find the values of *x* and *y*. *(Lesson 3.2)*

23.

24.
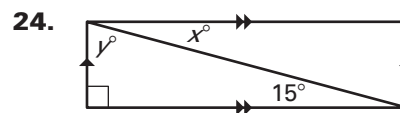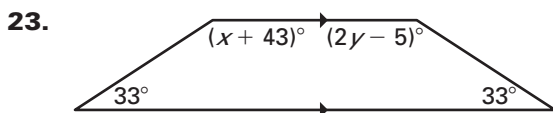
Find the value of *x* that makes *m* ‖ *n*. *(Lesson 3.3)*

25.

26.
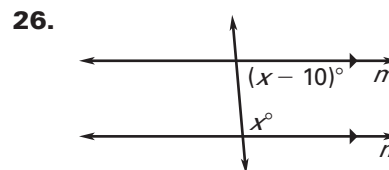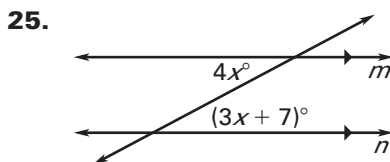
Graph a line through the given point with the given slope. *(Lesson 3.4)*

27. $P(1,-2)$, slope $= \dfrac{3}{2}$

28. $P(6, 0)$, slope $= -\dfrac{4}{5}$

29. $P(-3, -1)$, slope $= 3$

Write an equation of the line that passes through the given point *P* and has the given slope *m*. *(Lesson 3.5)*

30. $P(1, -2)$, slope $= \dfrac{3}{2}$

31. $P(6, 0)$, slope $= -\dfrac{4}{5}$

32. $P(-3, -1)$, slope $= 3$

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