**Cumulative Review**

*For use after Chapter 6*

**Draw a figure that fits the description.** *(Lesson 1.6)*

1. A quadrilateral that is not a parallelogram
2. A convex pentagon
3. A regular triangle

**Find the values of x and y.** *(Lesson 2.7)*

4. \((3x + 40)°\)
   \((y - 10)°\)
   \((2y - 73)°\)
   \((5x - 18)°\)

5. \((8x°\)
   \((13y°\)
   \((11y + 24)°\)
   \((3x + 15)°\)

**Is there enough information to prove \(m || n\)? If so, state the postulate or theorem you would use.** *(Lesson 3.3)*

6. \(m \parallel n\)
7. \(m \parallel n\)
8. \(m \parallel n\)

**Write a congruence statement for any figures that can be proved congruent. Explain your reasoning.** *(Lesson 4.2)*

9. \(\triangle ABC \cong \triangle AED\)
10. \(\triangle ABC \cong \triangle AED\)

**Write a proof.** *(Lesson 4.4)*

**GIVEN:** \(ABCDE\) is a regular pentagon.

**PROVE:** \(\triangle ABC \cong \triangle AED\)
Find the value of $x$. (Lesson 5.3)

12. $7x + 1 = 4x + 19$

13. $x + 45 = 4x$

14. $(6x - 7)° = (5x + 7)°$

Describe the possible lengths of the third side of the triangle given the lengths of the other two sides. (Lesson 5.5)

15. 9 meters, 12 meters
16. 17 yards, 25 yards
17. 3 feet, 50 inches

18. Test Average You took two tests in history class and earned scores of 84 and 70. Is the arithmetic mean (average) or the geometric mean higher? (Lesson 6.1)

Decide whether the statement is true or false. (Lesson 6.2)

19. If $\frac{7}{8} = \frac{13}{y}$, then $\frac{7}{13} = \frac{8}{y}$

20. If $\frac{9}{a} = \frac{b}{11}$, then $\frac{9}{a} + 9 = \frac{b}{11} + b$.

In the diagram, $\triangle ABC \sim \triangle DEF$. (Lesson 6.3)

21. Find the scale factor of $\triangle ABC$ to $\triangle DEF$.

22. Find the values of $x$ and $z$.

23. Find the perimeter of each triangle.

Verify that $\triangle ABC \sim \triangle DEF$. Find the scale factor of $\triangle ABC$ to $\triangle DEF$. (Lesson 6.5)

24. $\triangle ABC$: $AB = 16$, $AC = 18$, $BC = 24$

25. $\triangle ABC$: $AB = 36$, $AC = 8$, $BC = 40$

$\triangle DEF$: $DE = 40$, $DF = 45$, $EF = 60$

$\triangle DEF$: $DE = 27$, $DF = 6$, $EF = 30$

26. Poster Making You have a photograph of your friends that measures 4 inches by 5 inches. You plan to enlarge the photograph to make a poster that measures 52 inches by 65 inches. What is the scale factor of the enlargement? (Lesson 6.7)

Draw a dilation of the polygon with the given vertices using the given scale factor $k$. (Lesson 6.7)

27. $A(2, 6), B(0, -4), C(-6, 4); k = \frac{1}{2}$

28. $A(-1, 3), B(1, 0), C(-1, -4), D(-5, 2); k = 3$