Name _____ Class _____ Date _____

Cumulative Review

Chapters 1–3

For Exercises 1–17, choose the correct letter.

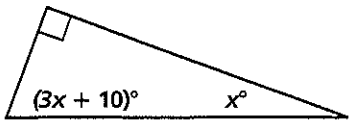
1. Which line is parallel to $y = \frac{1}{4}x + 6$?

A. $y = -4x + 2$ **B.** $y = -4$ **C.** $y = -\frac{1}{4}x + 7$ **D.** $y = \frac{1}{4}x + 7$

2. Classify the triangle at the right by its sides.

F. isosceles triangle **G.** scalene triangle

H. equilateral triangle **J.** right triangle



3. Find the value of x.

A. 40 **B.** 30 **C.** 20 **D.** 10

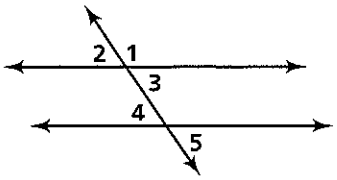
4. Which line is perpendicular to $y = 2x - 8$?

F. $4y + 2x = 2$ **G.** $y = 2x - 4$ **H.** $3x + 2y = -6$ **J.** $y = -2x + 7$

5. Classify $\angle 2$ and $\angle 4$ in the figure at the right.

A. alternate interior angles **B.** alternate exterior angles

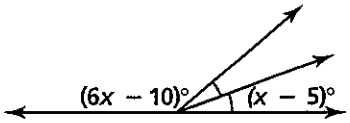
C. same-side interior angles **D.** corresponding angles



6. Find the value of x in the figure at the right.

F. 10 **G.** 12.5

H. 20 **J.** 25



7. Find the diameter of a circle with a radius of $4\sqrt{6}$.

A. $8\sqrt{6}$ **B.** $4\sqrt{12}$ **C.** $4\sqrt{3}$ **D.** $2\sqrt{6}$

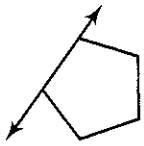
8. What is the midpoint of the segment with endpoints $(2, 8)$ and $(-6, 10)$?

F. $(-2, 9)$ **G.** $(-4, 1)$ **H.** $(-4, 9)$ **J.** $(-2, 1)$

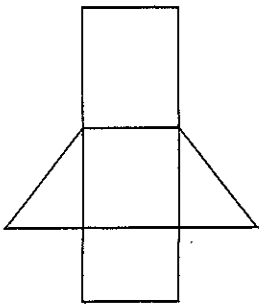
9. Classify the figure by its sides.

A. triangle **B.** hexagon

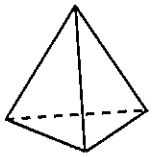
C. pentagon **D.** quadrilateral



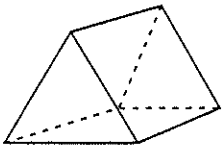
10. Which three-dimensional figure does the net represent?



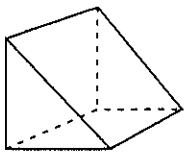
F.



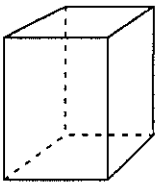
G.



H.



J.



Name _____ Class _____ Date _____

Cumulative Review (continued)

Chapters 1–3

11. What is the classification of a triangle with one angle greater than 90°?

A. scalene triangle **B.** acute triangle **C.** right triangle **D.** obtuse triangle

12. What is the circumference of a circle with an area of 64π in.^{2}?

F. 8π in. **G.** 32π in. **H.** 64π in. **J.** 16π in.

13. What is the slope of a line parallel to $\overleftrightarrow{AB}$ if $A(4, -3)$ and $B(-1, 7)$?

A. 2 **B.** -2 **C.** $\frac{1}{2}$ **D.** $-\frac{1}{2}$

14. Which property of equality or congruence justifies the following statement?

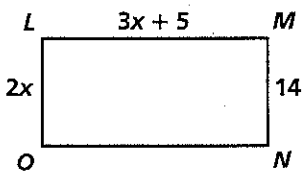
If $3m\angle 6 = 90$, then $m\angle 6 = 30$.

F. Subtraction **G.** Division **H.** Reflexive **J.** Transitive

15. Find the distance between $S(-1, 3)$ and $T(4, -9)$.

A. 5 **B.** 12 **C.** 13 **D.** 17

16. What is the area of rectangle $LMNO$?



F. 7 **G.** 364

H. 26 **J.** 182

17. What is the perimeter of rectangle $LMNO$?

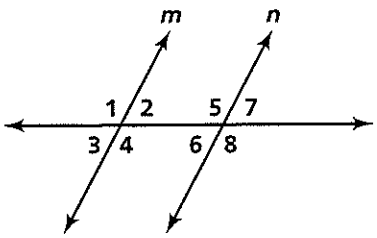
A. 28 **B.** 56

C. 80 **D.** 160

Supply the reason for each step in the proof.

Given: $m \parallel n$

Prove: $\angle 1 + \angle 7 = 180$



18. $m \parallel n$ ___?___

19. $\angle 2 + \angle 5 = 180$ ___?___

20. $\angle 2 \cong \angle 7$ ___?___

21. $\angle 1 \cong \angle 5$ ___?___

22. $\angle 1 + \angle 7 = 180$ ___?___

23. **Writing** How many ways are there to prove that two lines are parallel? Explain what they are and why they work.

24. **Open-ended** Sketch a right isosceles triangle. Where must the right angle be placed? Explain why.

25. Is it possible to have a scalene isosceles triangle? Explain.