Name _____ Class _____ Date _____

For Exercises 1-22 choose the correct letter.

1. The perimeter of a rectangle is 30 in. and the base is 10 in. What is the area?

   A. 15 in.^{2} **B.** 40 in.^{2}

   C. 150 in.^{2} **D.** 300 in.^{2}

   E. none of the above

2. Find the area of the triangle enclosed by the lines $x = 0$, $y = 5$, and $y = -x$.

   A. 12 square units **B.** $12\frac{1}{2}$ square units

   C. 25 square units **D.** 37 square units

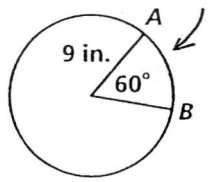
   E. none of the above

3. One base of a trapezoid is three times as long as the other. The height is the average of the two bases. If the area of the trapezoid is 64 yd^2, find the length of the longer base.

   A. 4 yd **B.** 8 yd **C.** 12 yd **D.** 16 yd

   E. none of the above

4. Jamal and Grace are going to divide a slice of pizza evenly. The measure of the pizza slice's arc is 60 and the radius of the pizza is 9 in. Find the arc length of Grace's slice.

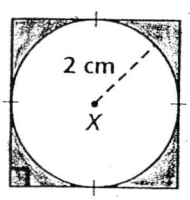


   A. 1.5π in. **B.** 3π in.

   C. 6π in. **D.** 9π in.

   E. none of the above

5. Find the area of the shaded region.



   A. $4\pi + 16$ cm^2

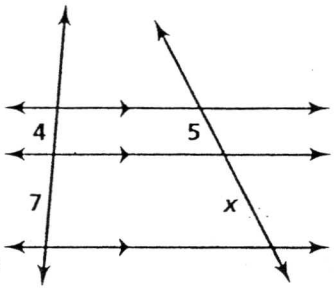
   B. $4\pi - 16$ cm^2

   C. $16 - 4\pi$ cm^2

   D. $16\pi - 16$ cm^2

   E. none of the above

6. Find the value of x.



A. $\frac{28}{5}$

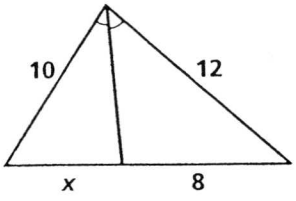
B. $\frac{20}{7}$

C. 6

D. $\frac{35}{4}$

E. none of the above

7. Find the value of x.



A. 10

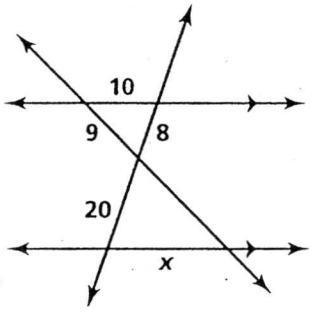
B. $\frac{20}{3}$

C. 15

D. $\frac{48}{5}$

E. none of the above

8. Find the value of x.



A. 25

B. $\frac{200}{9}$

C. 21

D. 22

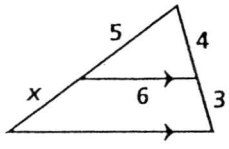
E. none of the above

9. If $\frac{x}{y} = \frac{m}{p}$, what can you conclude?

A. $xy = mp$ **B.** $\frac{x}{p} = \frac{m}{y}$ **C.** $xm = py$

D. $\frac{p}{y} = \frac{m}{x}$ **E.** none of the above

10. Find the value of x.

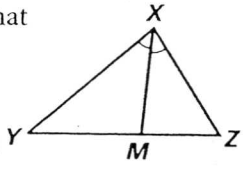


A. $\frac{15}{4}$ **B.** $\frac{12}{5}$

C. $\frac{20}{3}$ **D.** 2

E. none of the above

11. In the figure to the right, what can you conclude?



A. $YM = ZM$

B. $(XY)(ZM) = (XZ)(YM)$

C. $m\angle Z = m\angle XMZ$

D. $m\angle Y = m\angle XMZ$

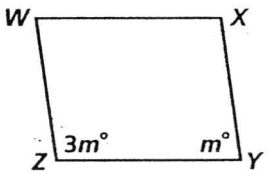
E. none of the above

12. The perimeter of parallelogram $HIJK$ is 32 in. If $HI = 12$ in., find the length of HK.

A. 4 in. **B.** 8 in. **C.** 12 in. **D.** 20 in.

E. none of the above

13. Find the value of m in parallelogram $WXYZ$.



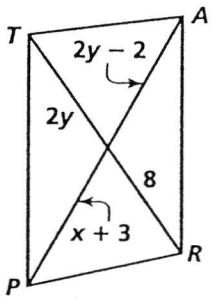
A. 40

B. 45

C. 90

D. 135

14. Determine the value of x for which $TARP$ is a parallelogram



A. 3

B. 4

C. 5

D. 6

E. none of the above

15. Which is sufficient to prove that a quadrilateral is a rhombus?

A. The diagonals bisect each other.

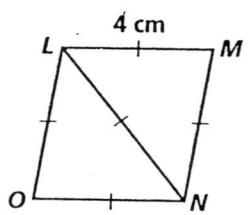
B. The diagonals are perpendicular.

C. All four sides are congruent.

D. A pair of opposite sides are congruent and parallel.

E. none of the above

16. Find the area of rhombus $LMNO$.



A. 16 cm^2

B. $8\sqrt{3}$ cm^2

C. 8 cm^2

D. $4\sqrt{3}$ cm^2

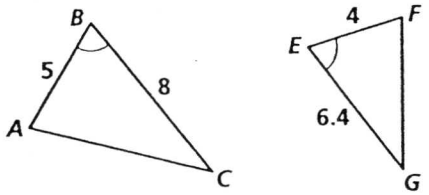
E. none of the above

17. Two similar triangles have perimeters in ratio 5:3. What is the ratio of their areas?

A. 5:3 **B.** 5:1 **C.** 25:9 **D.** 125:27

E. none of the above

18. How can you prove $\triangle ABC \sim \triangle FEG$?



A. AA ~ Postulate **B.** SSS ~ Theorem

C. SAS ~ Theorem **D.** ASA ~ Theorem

E. none of the above

19. Which sentence contains enough information to describe a vector?

A. A hiker walks 12 mi.

B. A car travels southeast at 50 mi/h.

C. An airplane travels at 600 mi/h.

D. A fish swims upstream.

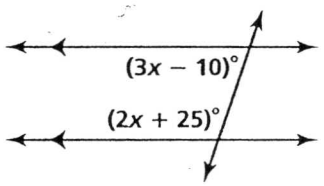
E. none of the above

20. A circle has radius 12 cm. The central angle of a sector measures 150. What is the area of the sector?

A. 60π **B.** 10π **C.** 144π

D. 67.5π **E.** none of the above

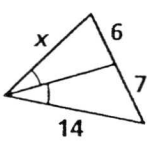
21. What is the value of x?



A. 29 **B.** 33 **C.** 35

D. 15 **E.** none of the above

22. Find the value of x.

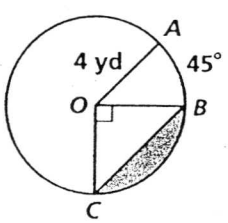


A. 12 **B.** 16.3

C. 15 **D.** 18

E. none of the above

23. Find the area of sector AOB. Leave your answer in terms of π.



24. Find the area of the shaded segment. Leave your answer in terms of π.

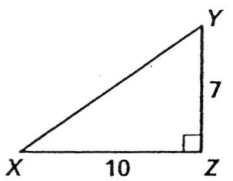
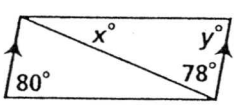
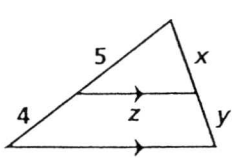
Compare the boxed quantity in Column A with the boxed quantity in Column B. Choose the best answer.

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined on the bases of the information supplied.

	Column A	Column B	
25.	 sin X	cos X	25. ____
26.	area of a hexagon with apothem $2\sqrt{3}$	area of an equilateral triangle with apothem $2\sqrt{2}$	26. ____
27.	the magnitude of $\vec{a}\langle -5, 2\rangle$	the magnitude of $\vec{b}\langle 3, 3\rangle$	27. ____
28.	 x	y	28. ____
29.	 x	y	29. ____
30.	z	y	30. ____

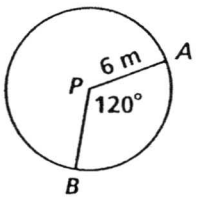
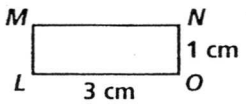
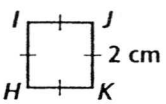
Compare the boxed quantity in Column A with the boxed quantity in Column B. Choose the best answer.

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The two quantities are equal.

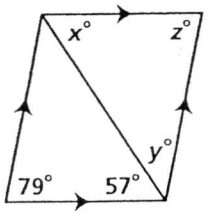
D. The relationship cannot be determined on the basis of the information supplied.

	Column A	Column B	
31.	 diameter of $\odot P$	(Use $\pi = 3.14$) length of $\overset{\frown}{AB}$	31. ____
32.	 perimeter of rectangle *LMNO*	 perimeter of square *HIJK*	32. ____
33.	area of rectangle *LMNO*	area of square *HIJK*	33. ____

34. A tree casts a shadow 40 ft long. A man who is 6 ft tall stands nearby and casts a shadow 9 ft long. Find the height of the tree.

____

35. Find the values of the variables.



x = ____

y = ____

z =