

Second Semester Exam 2010

Multiple Choice

Identify the choice that best completes the statement or answers the question.

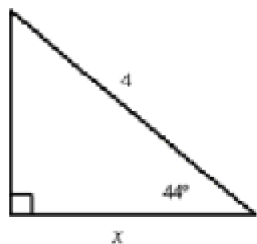
1. The measure of each interior angle of a regular pentagon is _____.

a. 120 b. 108 c. 90 d. 60 e. 150

2. What is the sum of the exterior angles in a convex 9-sided polygon?

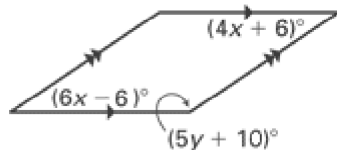
a. 500° b. 540° c. 1620° d. 360° e. 720°

3. Find the value of x using trigonometry.



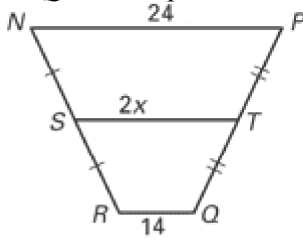
a. 0.72 b. 8.21 c. 19.46 d. 2.87 e. 11.21

4. What are the values of the variables in quadrilateral $MNOP$?

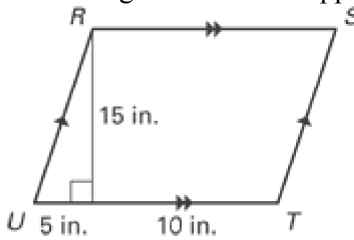


a. $x = 4, y = 19$ b. $x = 6, y = 28$ c. $x = 5, y = 27$ d. $x = 3, y = 32$ e. $x = 7, y = 26$

5. $NPQR$ is a trapezoid and $ST = 24$. Find the value of x .

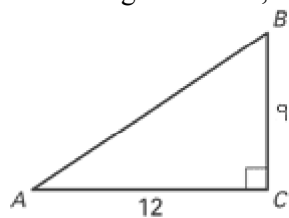


- a. 6 b. 10 c. 9.5 d. 9 e. 11
6. Use the figure to find the approximate area of $RSTU$.

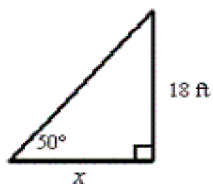


- a. 225 in.^2 b. 315 in.^2 c. 360 in.^2 d. 75 in.^2 e. 275 in.^2
7. Choose the statement that is *true* about a kite.
- a. Opposite sides are congruent. d. Diagonals are congruent.
 b. 1 pair of opposite angles are congruent e. None of these is true.
 c. Diagonals bisect each other.
8. What special type of quadrilateral has the vertices $F(-6, -2)$, $G(1, -2)$, $H(-6, -5)$, and $I(1, -5)$?
- a. rectangle c. parallelogram e. kite
 b. square d. rhombus
9. A 10-ft ladder leans against a wall so that the base of the ladder is 4 ft from the wall. How high up on the wall will the ladder reach (to the nearest foot)?
- a. 4 ft b. 9 ft c. 10 ft d. 11 ft e. 6 ft

10. In the diagram below, what is the length of AB .

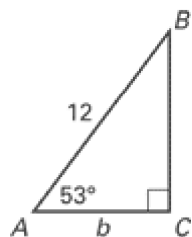


- a. 13.4 b. 208 c. 15 d. 80 e. 8.9
11. Use the tangent ratio for find x .



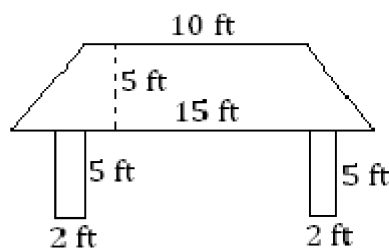
- a. 21.45 d. 1.19
 b. 15.10 e. 9.81
 c. 11.10
12. Let the numbers represent the lengths of the sides of a triangle. Which of the triangles is a right triangle?
- a. 3, 4, 5 d. 7.5, 8.5, 10.5
 b. 27, 36, 44 e. 18, 24, 31
 c. 2, 2, 3
13. The length of a diagonal of a square is 10 inches. What is the measure of one of its sides?
- a. $40\sqrt{2}$ in. c. $5\sqrt{2}$ in. e. $10\sqrt{2}$ in.
 b. $20\sqrt{2}$ in. d. 20 in.

14. Find the value of b in $\triangle ABC$. Round to the nearest tenth.



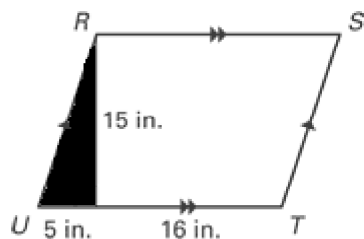
- a. 7.2 b. 9.6 c. 11.2 d. 11.4 e. 15.9

15. Find the total area of the shape below.



- a. 20 ft^2 b. 62.5 ft^2 c. 82.5 ft^2 d. 42.5 ft^2 e. 75 ft^2

16. Find the area of the unshaded region.



- a. 240 in^2 b. 202.5 in^2 c. 37.5 in^2 d. 277.5 in^2 e. 75 in^2

17. Which quadrilateral below is a rhombus and rectangle?

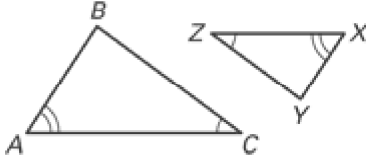
- a. Parallelogram b. Square c. Trapezoid d. Rhombus e. Kite

18. Foil the following polynomial.

$$(2x + 4)(3x - 2)$$

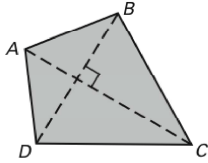
- a. $6x^2 + 8x - 8$ c. $6x^2 + 14x - 12$ e. $6x^2 + 8x$
 b. $20x - 12$ d. $8x$

19. The triangles shown are similar. $AB = 18$ and $XY = 2$ Find the ratio of perimeters in simplest form.



- a. $\frac{18}{6}$ c. $\frac{3}{1}$ e. $\frac{9}{1}$
 b. 24 d. $\frac{324}{36}$

20. Below is a kite. If $AC = 18$ and $BD = 10$, find the area of kite $ABCD$.



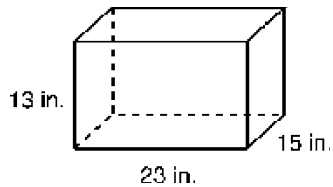
- a. 3 units² b. 270 units² c. 90 units² d. 135 units² e. 180 units²

21. Find the value of x in the equation below.

$$5x - 3 + 2x = 3x + 29$$

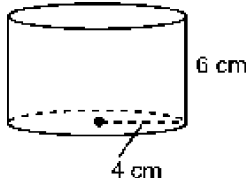
- a. 7 b. 8 c. 6 d. 5 e. 9

22. Find the surface area of the prism below.



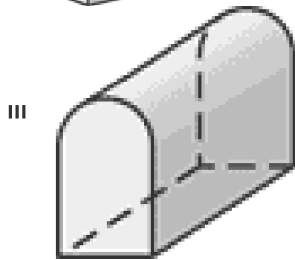
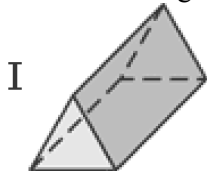
- a. 1678 in.² b. 61 in.² c. 1794 in.² d. 839 in.² e. 4485 in.²

23. Find the surface area of the right cylinder below.



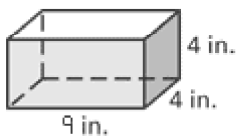
- a. 50.24 cm^2 b. 452.1 cm^2 c. 251.2 cm^2 d. 98.24 cm^2 e. 179.4 cm^2

24. Which of the figures shown below is not a polyhedron?



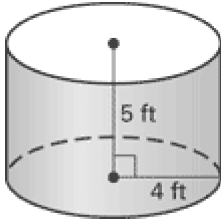
- a. I only b. II only c. III only d. I and III e. II and III

25. What is the volume of the right prism shown below?



- a. 48 in.^3 b. 64 in.^3 c. 112 in.^3 d. 144 in.^3 e. 128 in.^3

26. What is the volume of the right cylinder shown below?

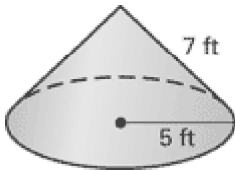


- a. about 251 ft² b. about 157 ft² c. about 224 ft² d. about 283 ft² e. about 151 ft²

27. Find the volume of a sphere with radius 3.1 m?

- a. 124.7 m³ b. 991.7 m³ c. 330.6 m³ d. 627.4 m³ e. 411.2 m³

28. What is the surface area of the right cone shown below?

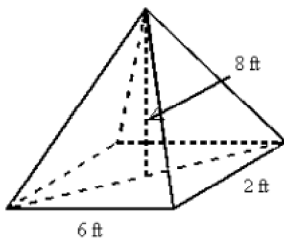


- a. about 241.9 ft² c. about 204.2 ft² e. about 152.9 ft²
 b. about 110 ft² d. about 188.5 ft²

29. The volume of a cube (all sides are the same length) is 27 cubic inches. What is the measurement of one of the sides?

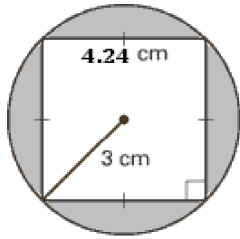
- a. 4 in. b. 5 in. c. 3 in. d. 2 in. e. 6 in.

30. The pyramid shown has a rectangular base and faces that are isosceles triangles. Find its volume.



- a. 48 ft³ b. 96 ft³ c. 32 ft³ d. 16 ft³ e. 288 ft³

36. What is the area of the shaded region in the diagram below?

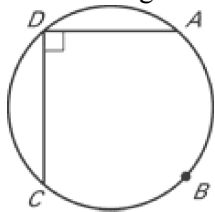


- a. about 19.72 cm^2 c. about 12.33 cm^2 e. about 8.11 cm^2
 b. about 14.59 cm^2 d. about 10.27 cm^2

37. A line which intersects a circle at exactly one point is called _____.

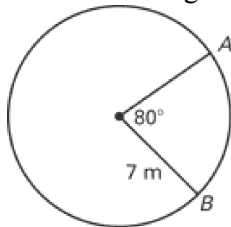
- a. secant b. tangent c. chord d. arc e. semicircle

38. Use the diagram to find $m \widehat{ABC}$.



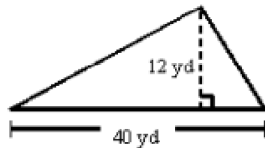
- a. 270° b. 90° c. 150° d. 230° e. 180°

39. What is the length of \widehat{AB} ?



- a. about 2.45 m c. about 9.77 m e. about 34.21 m
 b. about 28.27 m d. about 68.42 m

40. Find the area:



- a. 480 yd^2 b. 120 yd^2 c. 360 yd^2 d. 240 yd^2 e. 600 yd^2