

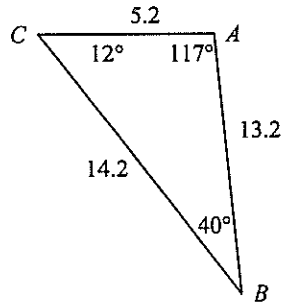
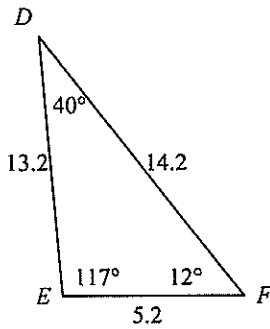
Geometry B Semester Final Exam

Multiple Choice

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

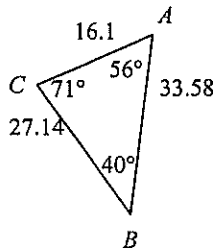
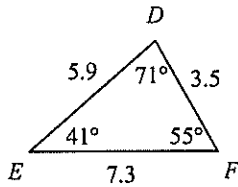
Determine whether each pair of figures is similar. Justify your answer.

1.



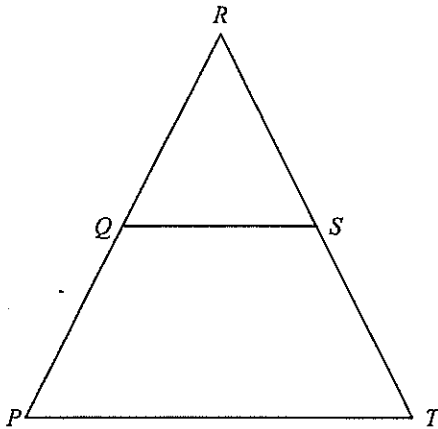
- $\triangle DEF$ is not similar to $\triangle BAC$. Corresponding angles are not the same.
- $\triangle DEF \sim \triangle BAC$ because the corresponding angles of each triangle are congruent. The ratio of the corresponding sides is 1.
- $\triangle DEF$ is not similar to $\triangle BAC$. The ratios of the corresponding sides are not the same.
- $\triangle DEF \sim \triangle ABC$ because the corresponding angles of each triangle are congruent. The ratio of the corresponding sides is 2.

2.



- $\triangle DEF \sim \triangle CBA$ because the corresponding angles are congruent.
- $\triangle DEF$ is not similar to $\triangle CBA$ because the corresponding angles are not congruent.
- $\triangle DEF \sim \triangle CBA$ because the ratio of the corresponding sides is proportional and the corresponding angles are congruent.
- $\triangle DEF$ is not similar to $\triangle CBA$ because the ratio of the corresponding sides is not proportional.

3. Find x so that $\overline{QS} \parallel \overline{PT}$.



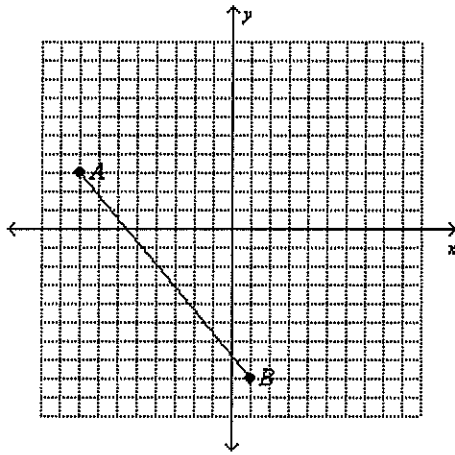
$PQ = 8, QR = 5, RS = 15, ST = x + 3$

- | | |
|---------|---------|
| a. 6.38 | c. 24 |
| b. 21 | d. 9.38 |

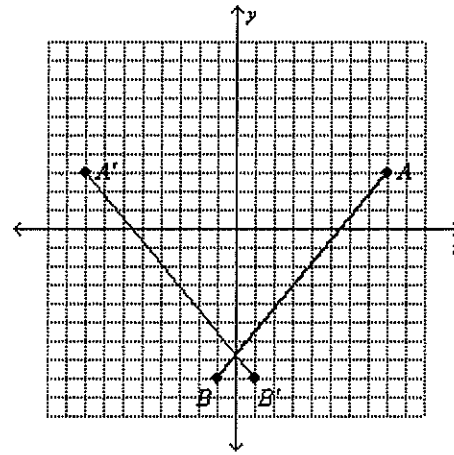
4. Graph the figure and its image under the given reflection.

\overline{AB} with endpoints $A(-8, 3)$ and $B(1, -8)$ reflected in the y -axis.

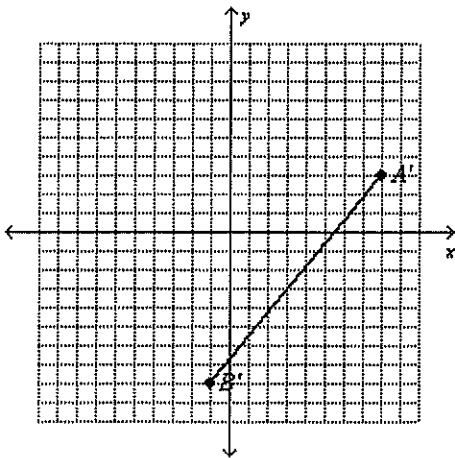
a.



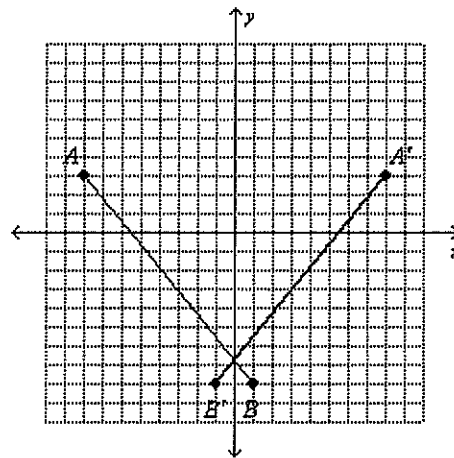
c.



b.

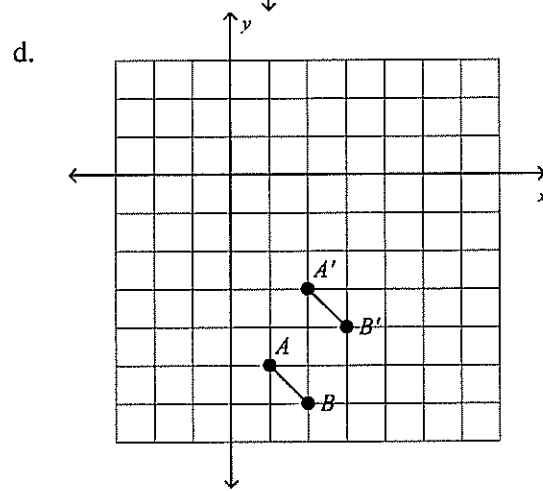
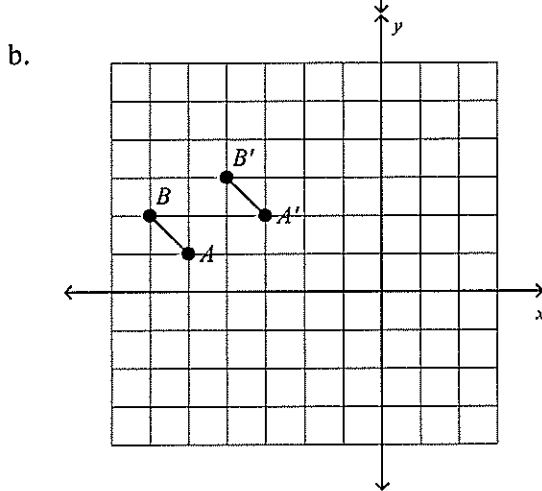
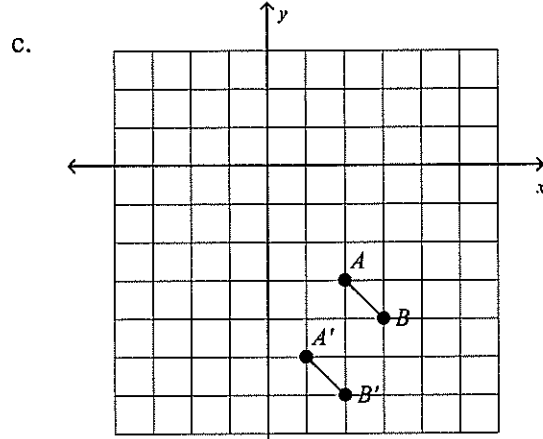
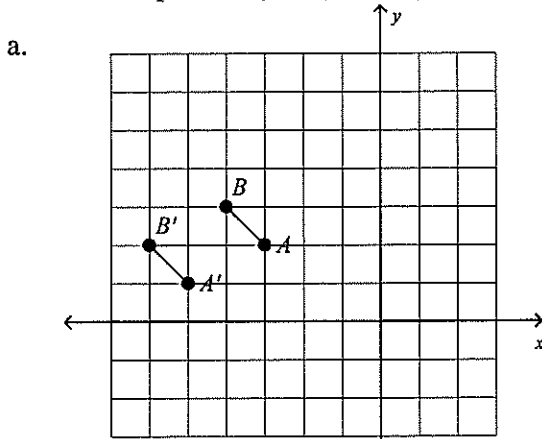


d.

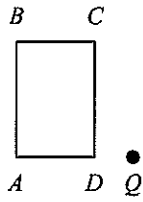


Graph each figure and its image under the given translation.

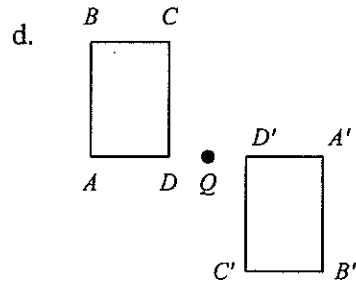
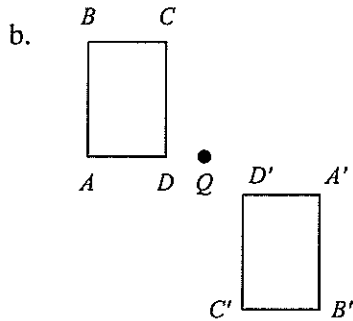
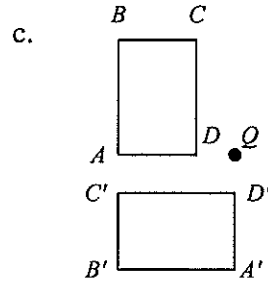
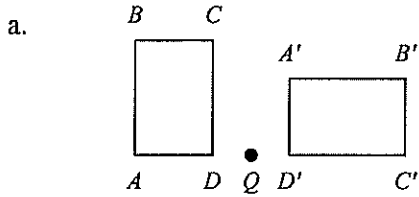
5. \overline{AB} with endpoints $A(-3, 2)$ and $B(-4, 3)$ under the translation left two units and down one unit



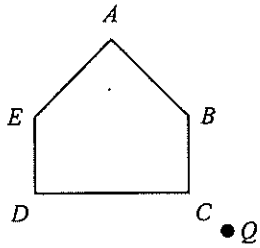
Copy parallelogram $ABCD$.



6. Rotate the parallelogram 90° clockwise about point Q .

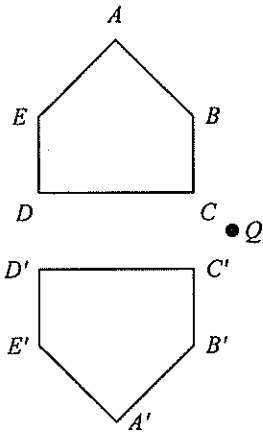


Copy pentagon $ABCDE$.

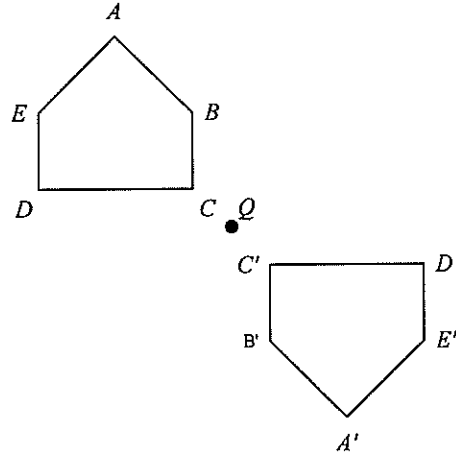


7. Rotate the pentagon 90° clockwise about point Q .

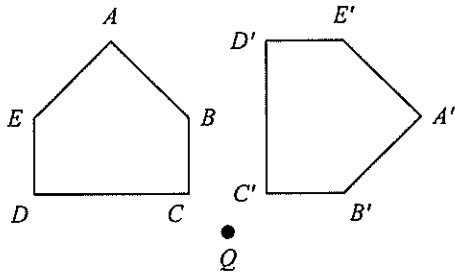
a.



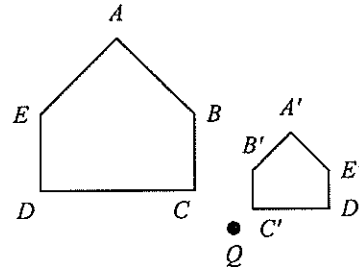
c.



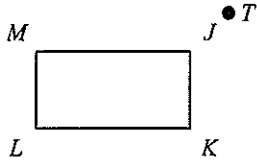
b.



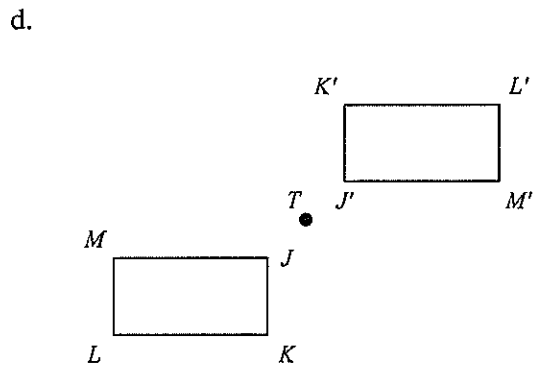
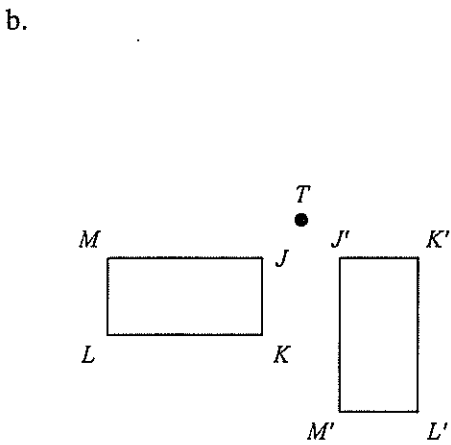
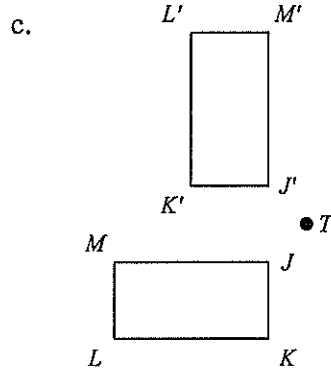
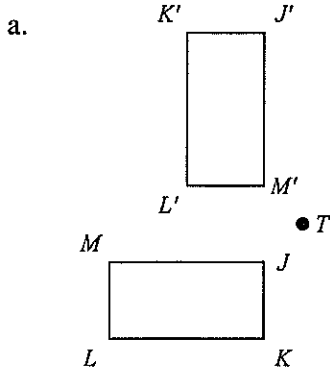
d.



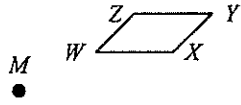
Copy rectangle $JKLM$.



8. Rotate the rectangle 90° clockwise about point T .

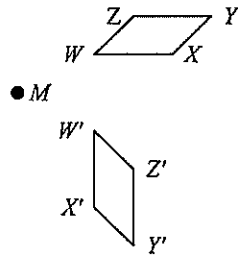


Copy parallelogram $WXYZ$.

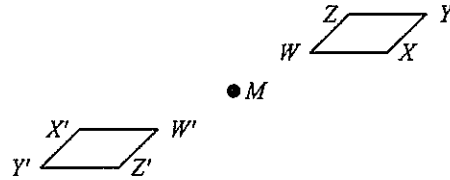


9. Rotate the parallelogram 180° clockwise about point M .

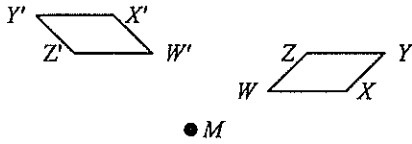
a.



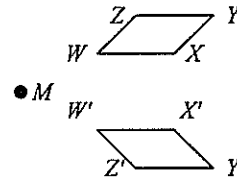
c.



b.

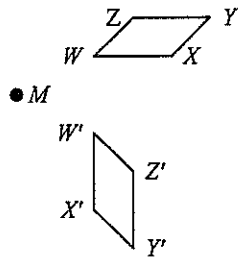


d.

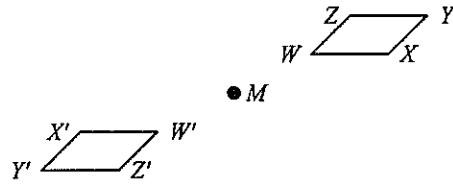


10. Rotate the parallelogram 180° counterclockwise about point M .

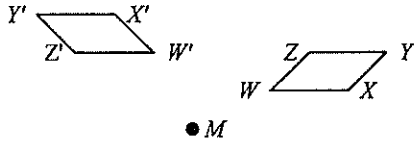
a.



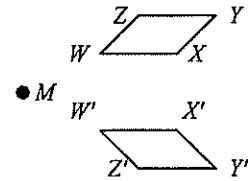
c.



b.



d.



11. Find the magnitude and direction of \overrightarrow{CD} for the given coordinates. Round to the nearest tenth.

$C(-4, 1), D(-7, 3)$

a. 11.7, 146.3°

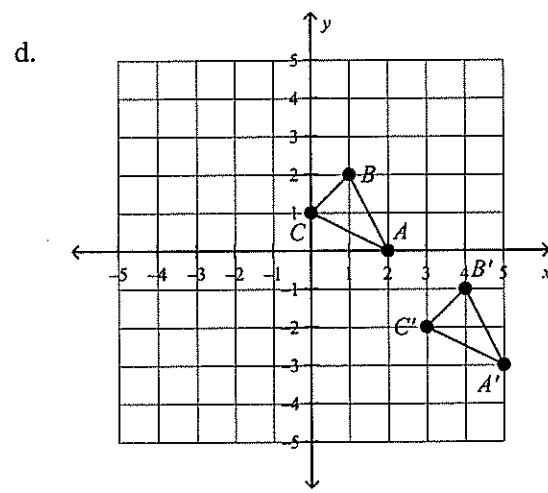
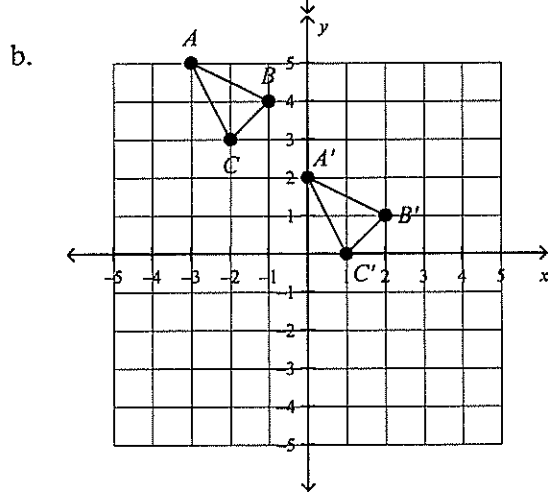
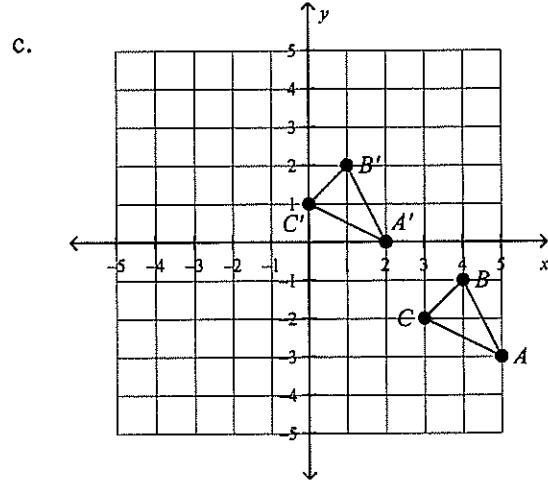
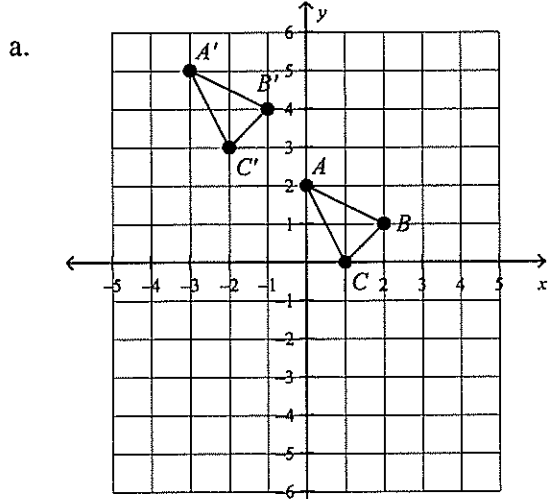
b. 3.6, 146.3°

c. 146.3, 3.6°

d. 146.3, 11.7°

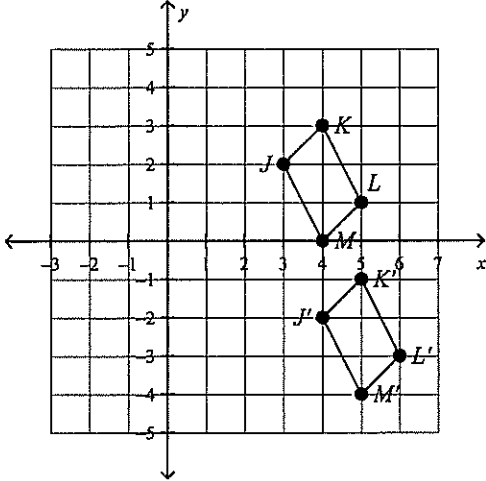
Graph the image of each figure under a translation by the given vector.

12. $\triangle ABC$ with vertices $A(-3, 5)$, $B(-1, 4)$, $C(-2, 3)$; $\vec{b} = \langle 3, -3 \rangle$

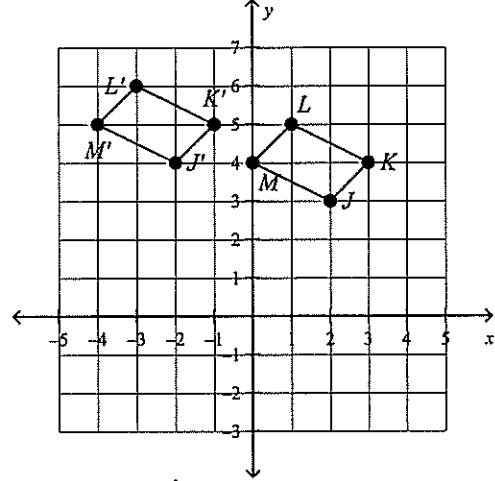


13. parallelogram $JKLM$ with vertices $J(2, 3)$, $K(3, 4)$, $L(1, 5)$, $M(0, 4)$; $\vec{c} = \langle -4, 1 \rangle$

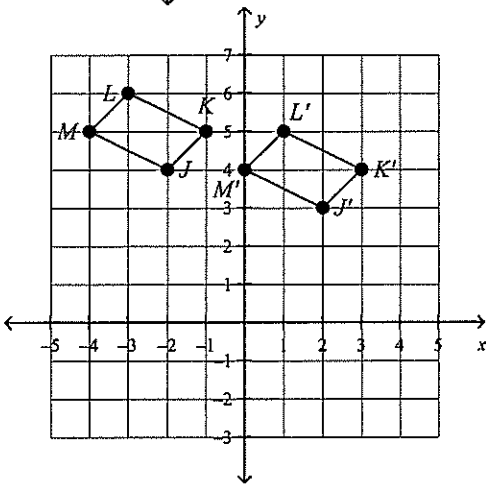
a.



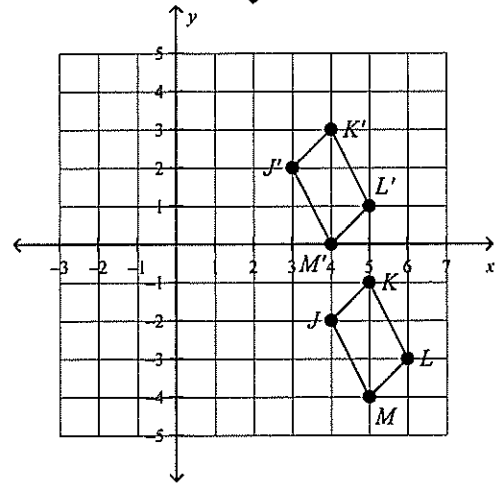
c.



b.

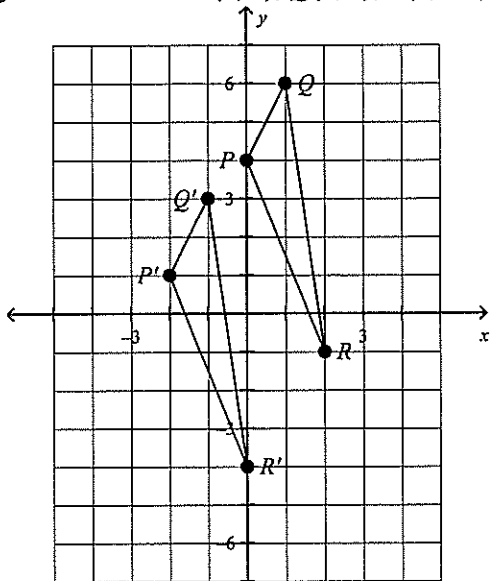


d.

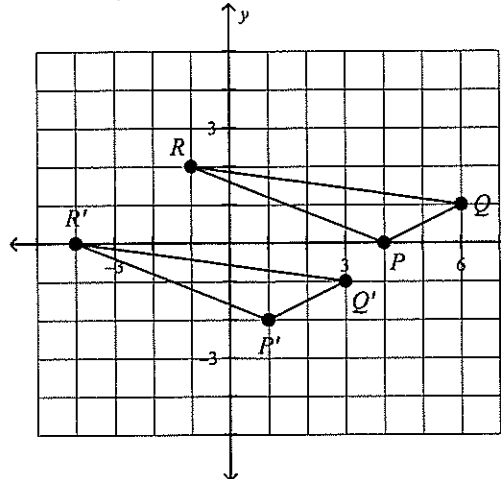


14. $\triangle PQR$ with vertices $P(0, 4)$, $Q(1, 6)$, $R(2, -1)$; $\vec{d} = \langle 1, -2 \rangle$, $\vec{f} = \langle -3, -1 \rangle$

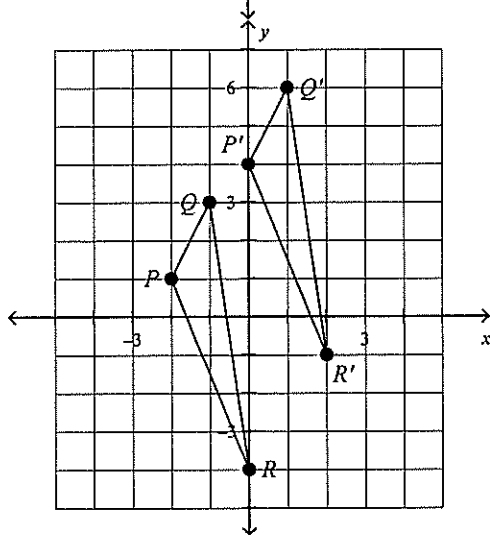
a.



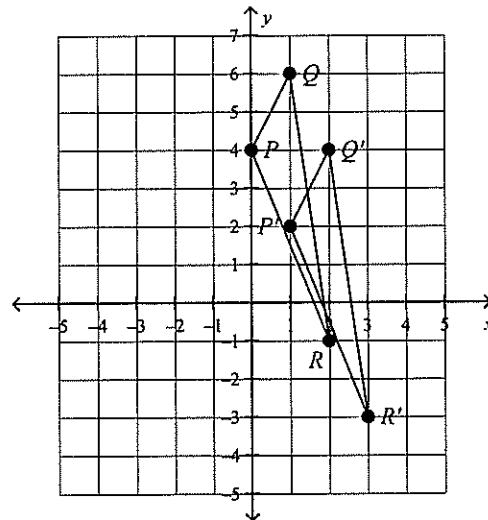
c.



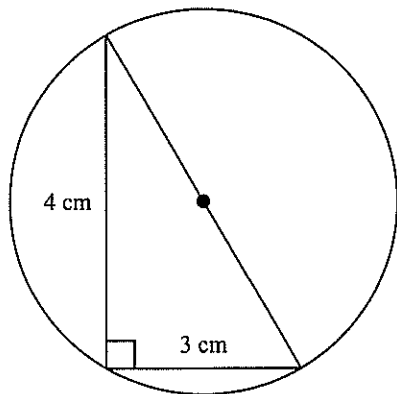
b.



d.



15. Find the exact circumference of the circle.



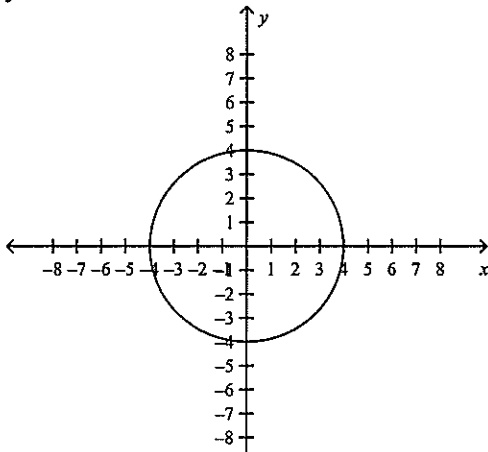
- a. 7π cm
- b. 5π cm

- c. 10π cm
- d. 4π cm

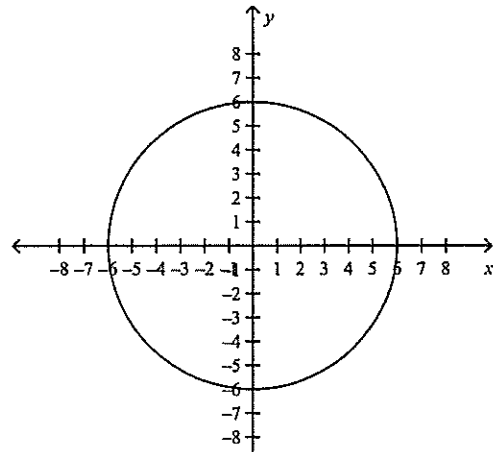
Graph the equation.

16. $x^2 + y^2 = 16$

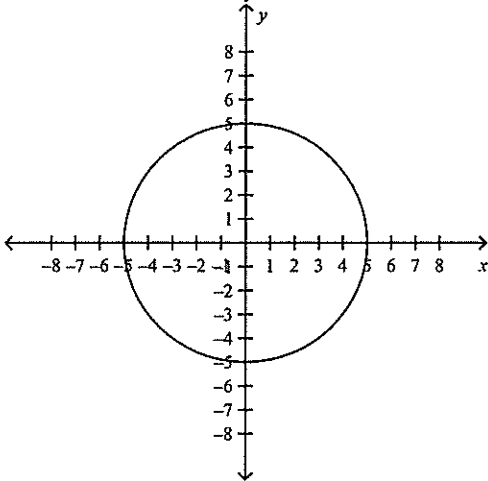
a.



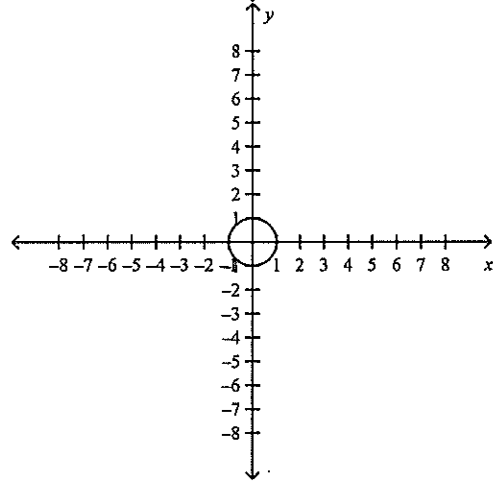
c.



b.

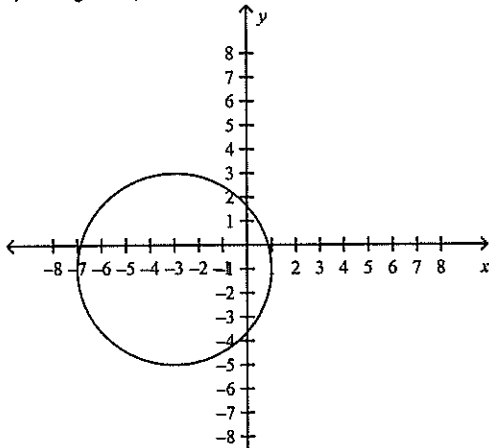


d.

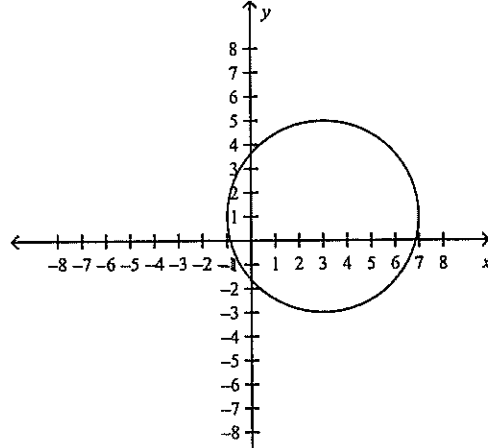


17. $(x+1)^2 + (y+3)^2 = 16$

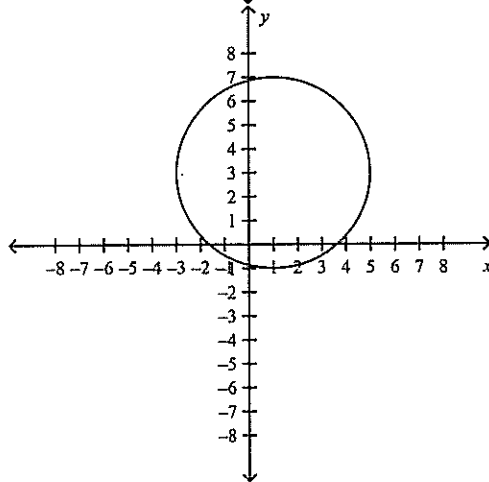
a.



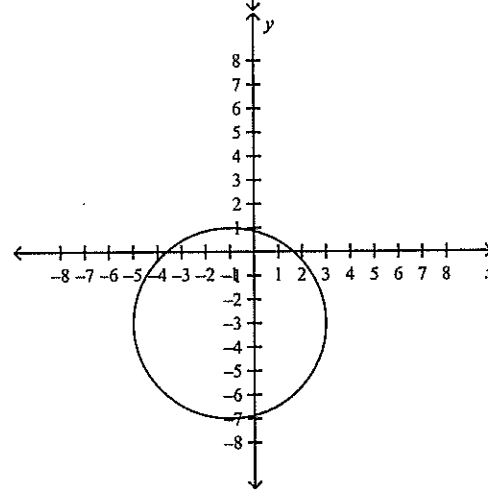
c.



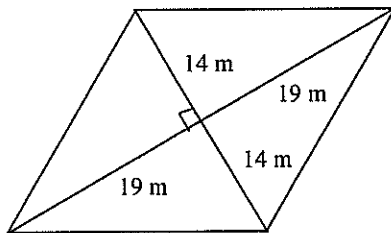
b.



d.



18. Find the area of the figure. Round to the nearest tenth if necessary.



a. 66 m^2

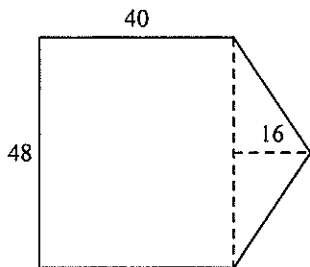
c. 532 m^2

b. 1064 m^2

d. 266 m^2

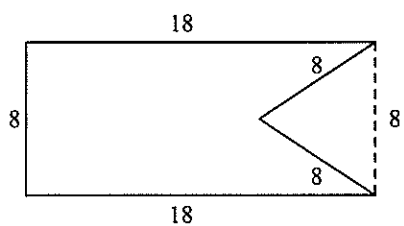
Find the area of the figure. Round to the nearest tenth if necessary.

19.



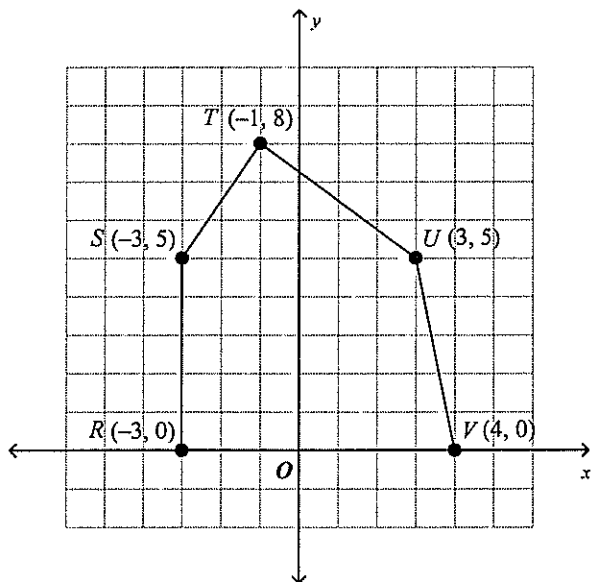
- a. 1920 units²
- b. 1936 units²
- c. 2304 units²
- d. 2688 units²

20.



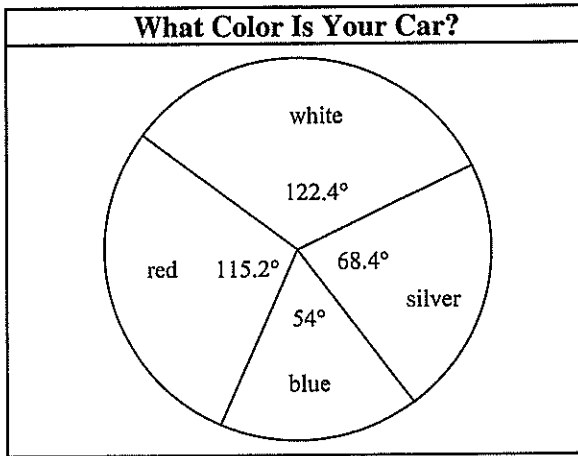
- a. 121.4 units²
- b. 116.3 units²
- c. 98.7 units²
- d. 88.6 units²

21.



- a. 41.5 units²
- b. 50.5 units²
- c. 74 units²
- d. 56.5 units²

Seniors at a high school were asked what color car they drive. The results were put in a circle graph. The measure of each central angle is shown. If a senior is chosen at random from this school, find the probability of each response.

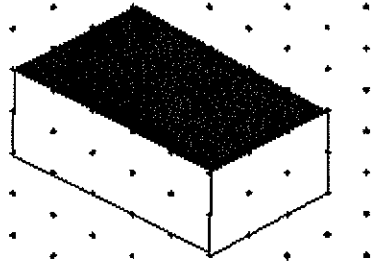


22. Car color is *not* red or blue.
- | | |
|---------|---------|
| a. 0.53 | c. 0.51 |
| b. 0.47 | d. 0.49 |

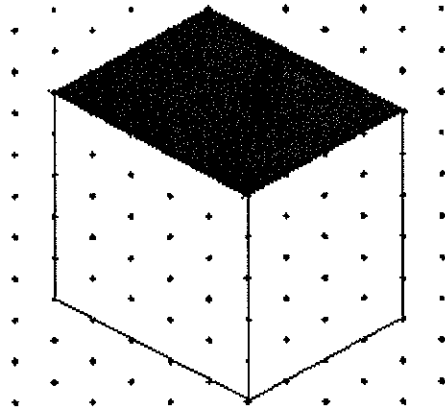
Sketch each solid using isometric dot paper.

23. rectangular prism 5 units high, 5 units long, and 4 units wide

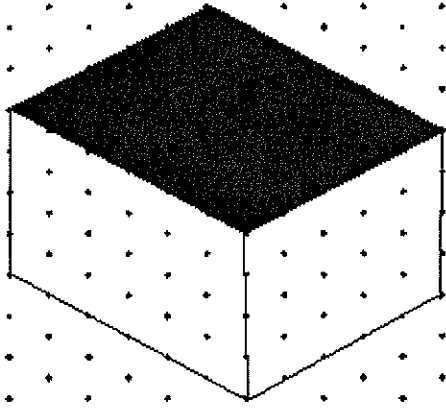
a.



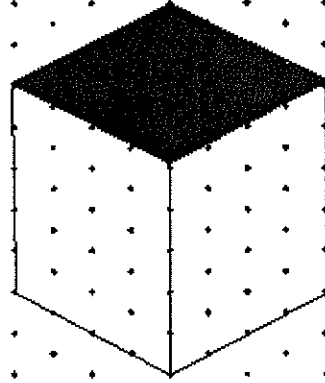
c.



b.

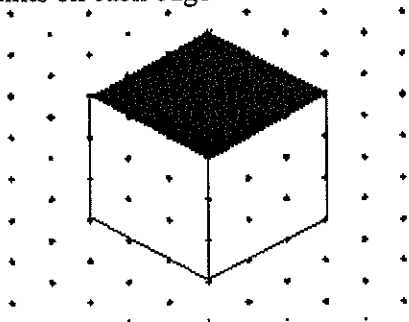


d.

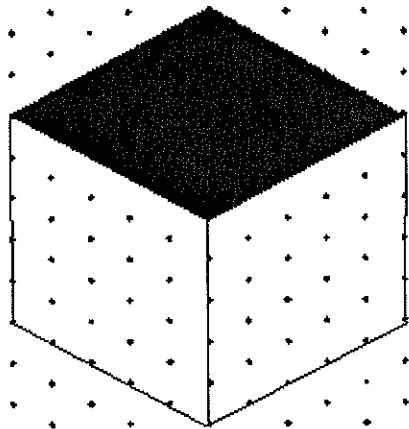


24. cube 6 units on each edge

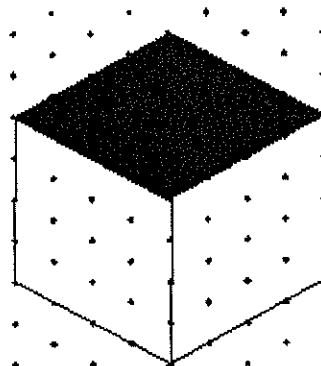
a.



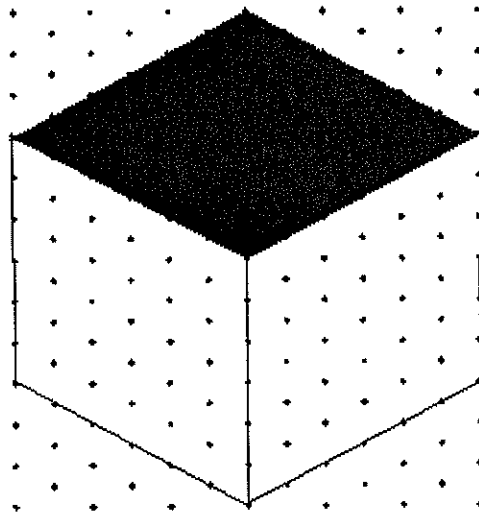
b.



c.

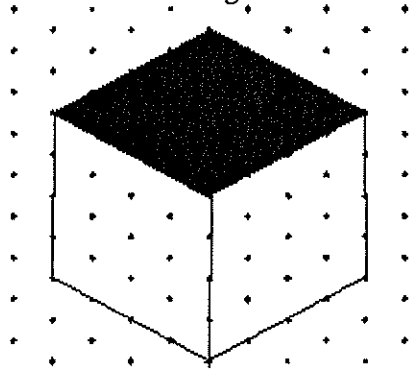


d.

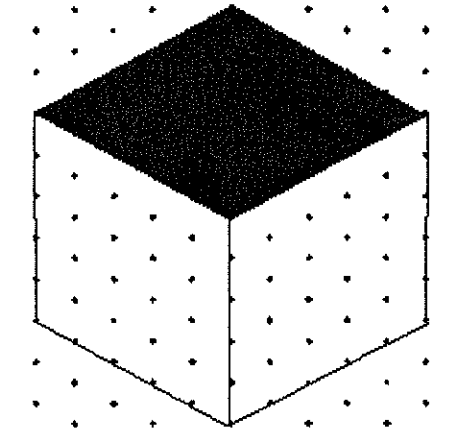


25. cube 4 units on each edge

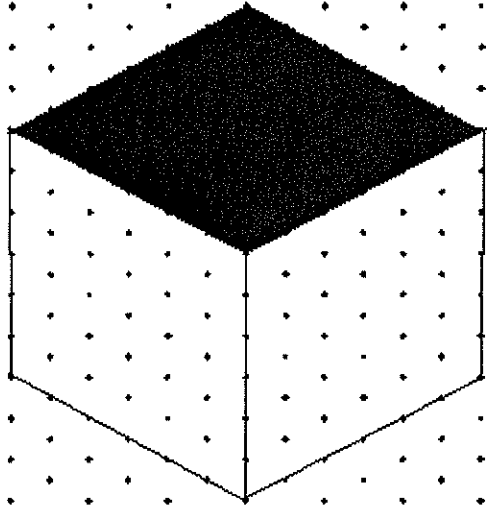
a.



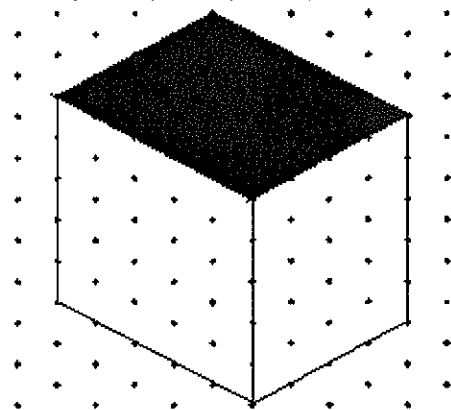
c.



b.

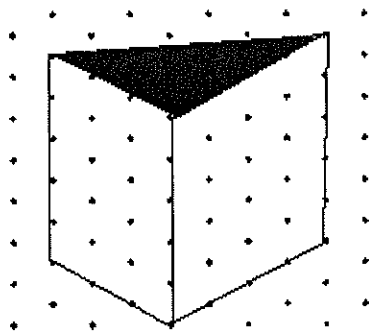


d.

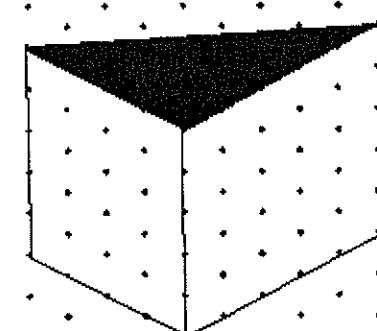


26. triangular prism 6 units high, with bases that are right triangles with legs 4 units and 5 units long

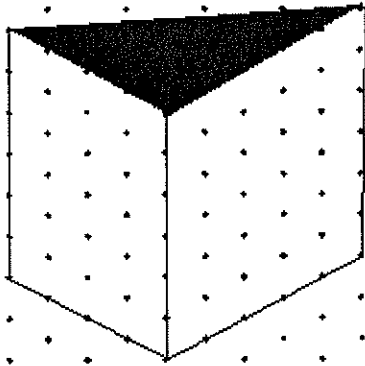
a.



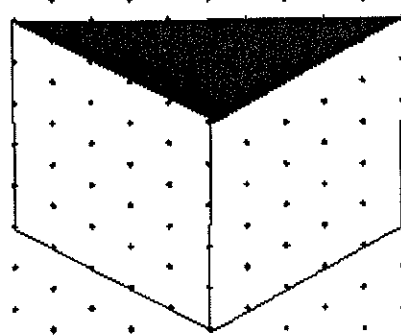
c.



b.

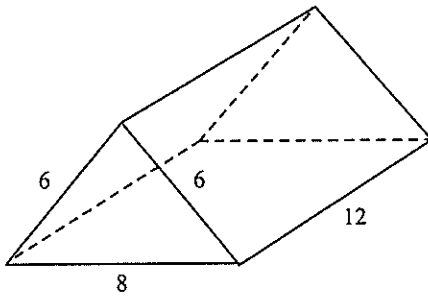


d.



Find the lateral area of each prism. Round to the nearest tenth if necessary.

27.



a. 240 units²

c. 275.8 units²

b. 258 units²

d. 292 units²

28. Suppose a snow cone has a paper cone that is 8 centimeters deep and has a diameter of 5 centimeters. The flavored ice comes in a spherical scoop with a diameter of 5 centimeters and rests on top of the cone. If all the ice melts into the cone, will the cone overflow? Explain.

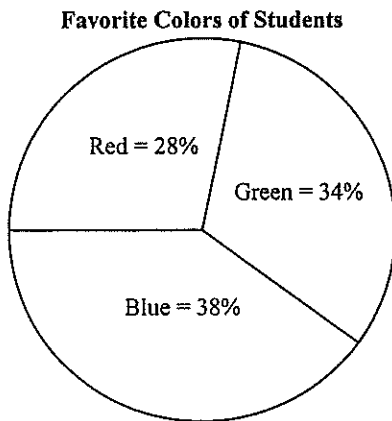
a. No. The volume of the ice is less than the volume of the cone.

b. No. The volume of the ice is exactly the same as the volume of the cone.

c. Yes. The volume of the ice is greater than the volume of the cone.

d. There is not enough information given to solve this problem.

Suppose that the pie graph below is a sphere with a radius of 12 centimeters.

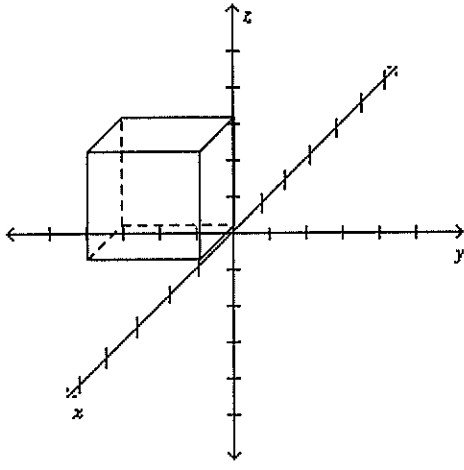


29. What is the surface area of the portion of the sphere in which the students' favorite color is green? Round your answer to the nearest tenth.
- a. 1808.6 cm^2 c. 687.3 cm^2
b. 614.9 cm^2 d. 506.4 cm^2

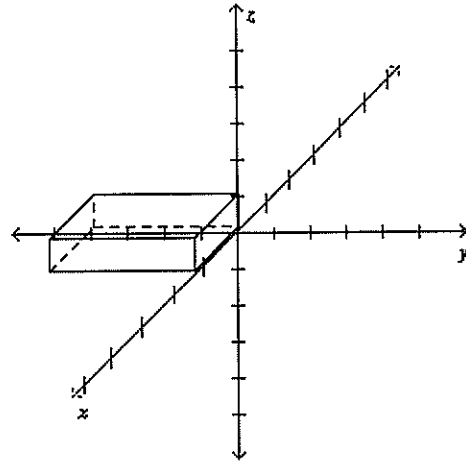
Graph a rectangular solid that contains the given point and the origin as vertices.

30. $B(1, -3, 3)$

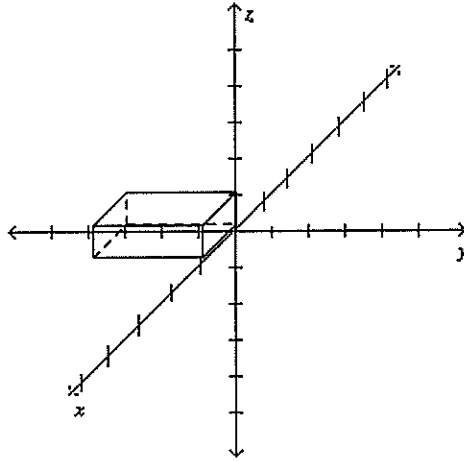
a.



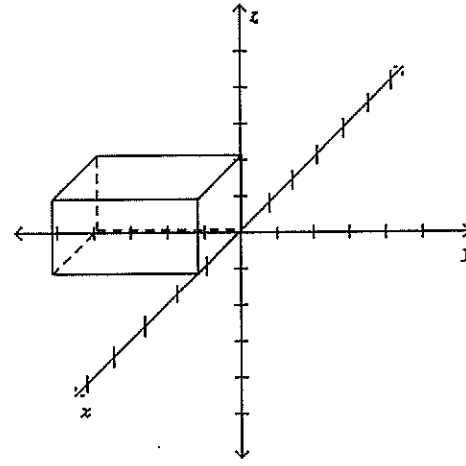
c.



b.



d.

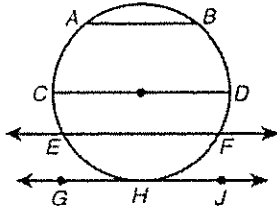




CHAPTER 11 **Chapter Test**
Form A

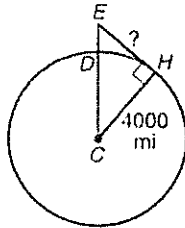
Circle the best answer.

1. Which describes \overline{EF} ?



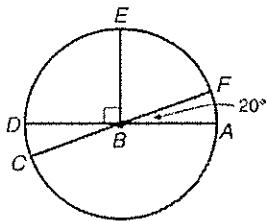
- A chord C secant
B radius D tangent

2. A plane is cruising at an altitude of 5.5 miles. Which equation can be used to find the distance from the plane to the horizon?



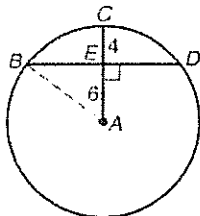
- A $EC^2 = EH^2 + CH^2$
B $DC^2 = EH^2 + CH^2$

3. What is $m\widehat{EA}$?



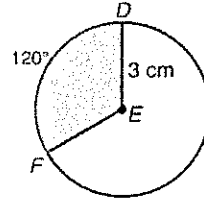
- A 70° B 90°

4. What is the length of \overline{BD} ?



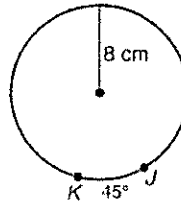
- A 8 C 12
B 10 D 16

5. What is the area of sector DEF in terms of π ?



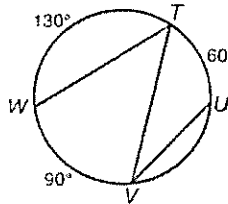
- A $\frac{\pi}{3} \text{ cm}^2$ C $2\pi \text{ cm}^2$
B $\pi \text{ cm}^2$ D $3\pi \text{ cm}^2$

6. What is the length of \widehat{JK} ?



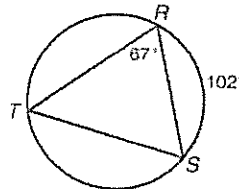
- A $2\pi \text{ cm}$ B $8\pi \text{ cm}$

7. What is $m\angle WTV$?



- A 30° C 60°
B 45° D 90°

8. What is $m\angle RST$?



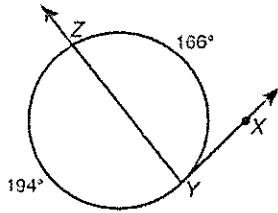
- A 51° C 67°
B 62° D 102°

CHAPTER
11

Chapter Test

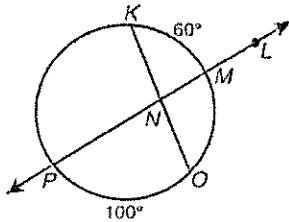
Form A continued

9. What is $m\angle XYZ$?



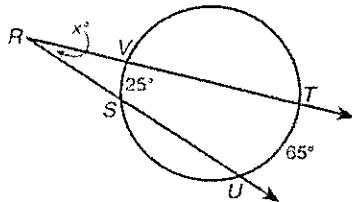
- A 83° B 97°

10. What is $m\angle KNL$?



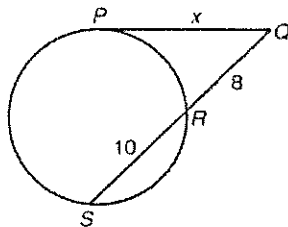
- A 20°
B 30°
C 60°
D 80°

11. What is the value of x ?



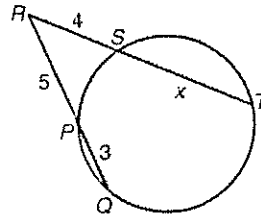
- A 20
B 25
C 45
D 65

12. What is the value of x ?



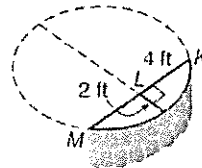
- A 12 B $\sqrt{80}$

13. What is the value of x ?



- A 3.75 C 7.75
B 6 D 10

14. Archaeologists discovered a portion of a stone wall. To calculate its original diameter, they marked and measured chord \overline{KM} and its perpendicular bisector. What was the diameter of the original circular wall?

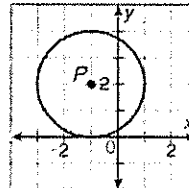


- A 8 ft B 10 ft

15. What are the coordinates of the center of the circle $(x + 3)^2 + (y + 5)^2 = 144$?

- A (3, 5) B (-3, -5)

16. Which is the equation for circle P?



- A $(x - 1)^2 + (y - (-2))^2 = 4$
B $(x - 1)^2 + (y - 2)^2 = 4$
C $(x - (-1))^2 + (y - 2)^2 = 4$
D $(x - (-1))^2 + (y - (-2))^2 = 4$

17. Which are used to find the center of a circle drawn through three noncollinear points?

- A perpendicular bisectors
B altitudes