

Give the formula for the following:

1. Area of a Parallelogram \_\_\_\_\_
2. Area of a Triangle \_\_\_\_\_
3. Area of a Trapezoid \_\_\_\_\_
4. Area of a Circle \_\_\_\_\_
5. Circumference of a Circle \_\_\_\_\_

6. Why do we use symmetry in finding areas of irregular figures?

Give the formulas for the following:

7. Volume of a Prism \_\_\_\_\_

Define prism:

8. Volume of a Cylinder \_\_\_\_\_
9. Volume of a Pyramid \_\_\_\_\_
10. Volume of a Cone \_\_\_\_\_

What's the difference between a pyramid and a cone?

11. How do you find the surface area of a prism or cylinder?

12. Give formula for area (surface) of a sphere: \_\_\_\_\_

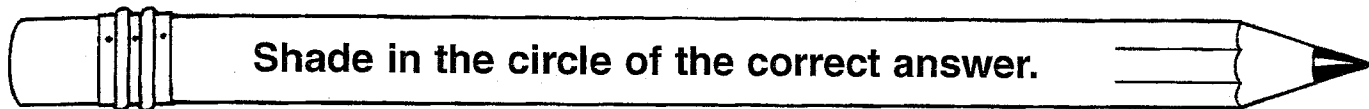
13. Give formula for volume of a sphere: \_\_\_\_\_

14. What is a hemisphere?

15. Give the formula for mass: \_\_\_\_\_

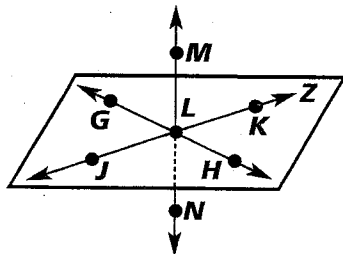
16. 1 kg = \_\_\_\_\_ g      1 t = \_\_\_\_\_ kg

[BONUS: Formula for Surface area of a Cone: \_\_\_\_\_ ]



1. Which two lines are coplanar?

- (A)  $\overleftrightarrow{GH}$  and  $\overleftrightarrow{JK}$
- (B)  $\overleftrightarrow{JK}$  and  $\overleftrightarrow{MN}$
- (C)  $\overleftrightarrow{LK}$  and  $\overleftrightarrow{LJ}$
- (D)  $J$  and  $K$

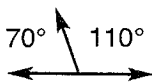


2. Which point is the vertex of  $\angle HLK$ ?

- (A)  $G$
- (B)  $H$
- (C)  $L$
- (D)  $K$

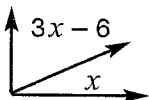
3. Which describes these two angles?

- (A) complementary
- (B) supplementary
- (C) vertical
- (D) None of these answers.



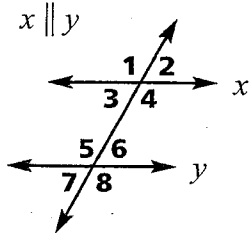
4. These two angles are complementary. What is the measure of  $x$ ?

- (A)  $24^\circ$
- (B)  $32^\circ$
- (C)  $45^\circ$
- (D)  $90^\circ$



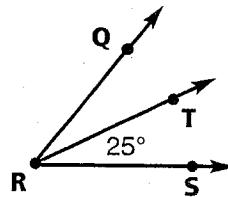
5. Which pair of angles is congruent?

- (A)  $\angle 1$  and  $\angle 2$
- (B)  $\angle 1$  and  $\angle 7$
- (C)  $\angle 5$  and  $\angle 7$
- (D)  $\angle 5$  and  $\angle 8$



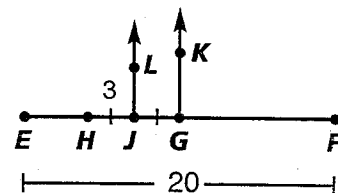
6. Given:  $\overleftrightarrow{RT}$  bisects  $\angle QRS$ .  $m\angle TRS = 25^\circ$ . Which is true?

- (A)  $m\angle QRS = 25^\circ$
- (B)  $m\angle QRT = 50^\circ$
- (C)  $m\angle QRS = 50^\circ$
- (D)  $m\angle TRS + \angle QRS = 90^\circ$



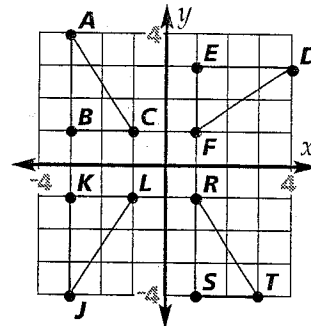
7. Given:  $\overleftrightarrow{GK}$  bisects  $\overleftrightarrow{EF}$ .  $\overleftrightarrow{JL}$  bisects  $\overleftrightarrow{HG}$ .  $EF = 20$ .  $HJ = 3$ . How long is  $\overline{EH}$ ?

- (A) 3
- (B) 4
- (C) 5
- (D) 10



8. Which triangle has these vertices:  $(1, -1)$ ,  $(1, -4)$ , and  $(3, -4)$ ?

- (A)  $\triangle ABC$
- (B)  $\triangle DEF$
- (C)  $\triangle JKL$
- (D)  $\triangle RST$

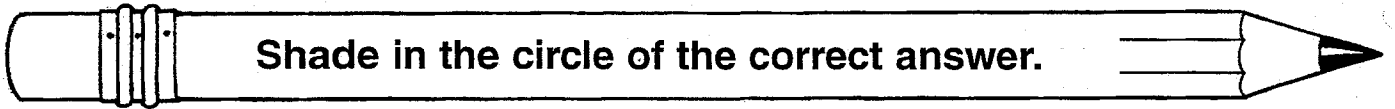


9. Which triangle is a reflection of  $\triangle ABC$  over the  $x$ -axis?

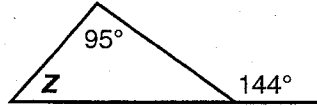
- (A)  $\triangle ABC$
- (B)  $\triangle DEF$
- (C)  $\triangle JKL$
- (D)  $\triangle RST$

10. Which point is the midpoint between  $(-1, 1)$  and  $(-5, -7)$ ?

- (A)  $(-6, -8)$
- (B)  $(-6, -6)$
- (C)  $(-4, -6)$
- (D)  $(-3, -3)$



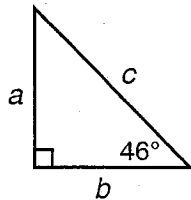
1. What is the measure of  $\angle Z$ ?



- (A)  $36^\circ$                       (B)  $49^\circ$   
 (C)  $131^\circ$                     (D)  $144^\circ$

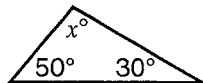
2. Which side is shortest?

- (A)  $a$   
 (B)  $b$   
 (C)  $c$   
 (D) cannot be determined



3. Which correctly describes this triangle?

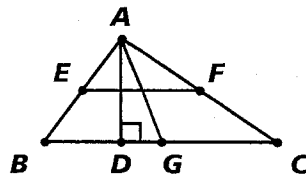
- (A) scalene and obtuse  
 (B) isosceles and acute  
 (C) scalene and acute  
 (D) right and equilateral



4. Which segment is an altitude of  $\triangle ABC$ ?

- (A)  $\overline{AC}$   
 (B)  $\overline{AG}$   
 (C)  $\overline{EF}$   
 (D) None of these answers.

$E, F,$  and  $G$  are midpoints of  $\overline{AB}, \overline{AC},$  and  $\overline{BC}.$

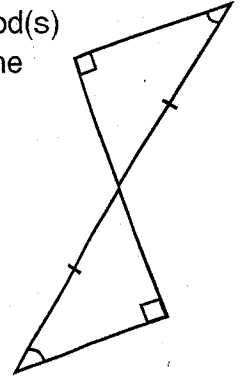


5. If  $EF = 10$ , which is true?

- (A)  $AD = 10$                       (B)  $BC = 10$   
 (C)  $BC = 20$                       (D)  $EG = GF$

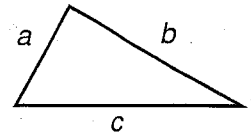
6. Which congruence method(s) could be used to prove the triangles are congruent?

- (A)  $AAS$  and  $HL$   
 (B)  $HL$  only  
 (C)  $ASA$  only  
 (D)  $AAS$  and  $ASA$



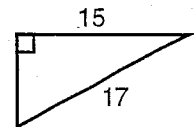
7. If  $c^2 = a^2 + b^2$ , what type of triangle is this?

- (A) right  
 (B) acute  
 (C) obtuse  
 (D) equilateral



8. What is the length of the missing side?

- (A) 8                                      (B) 9  
 (C) 11                                    (D) 13

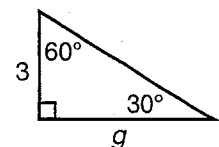


9. What is the distance between these two points:  $(-3, 10)$  and  $(1, 7)$ ?

- (A)  $\sqrt{7}$  units                      (B) 4 units  
 (C) 5 units                              (D) 25 units

10. What is the measure of side  $g$ ?

- (A)  $3\sqrt{2}$   
 (B)  $3\sqrt{3}$   
 (C) 6  
 (D) cannot be determined

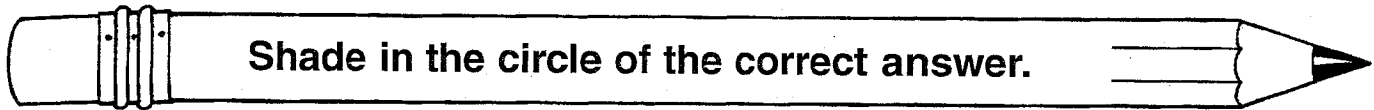


Name \_\_\_\_\_

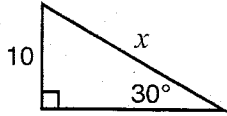
Date \_\_\_\_\_ Score \_\_\_\_\_ %

# Assessment C

## Trigonometry, Polygons, and Solids



1. Which trigonometric equation is correct?

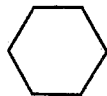


- (A)  $\sin 30^\circ = \frac{10}{x}$       (B)  $\cos 30^\circ = \frac{10}{x}$   
 (C)  $\tan 30^\circ = \frac{x}{10}$       (D)  $\sin 60^\circ = \frac{x}{10}$

2. Use the formula to determine the measure of an interior angle in a regular hexagon.

$$\frac{(n-2) \cdot 180^\circ}{n}$$

- (A)  $30^\circ$   
 (B)  $60^\circ$   
 (C)  $110^\circ$   
 (D)  $120^\circ$



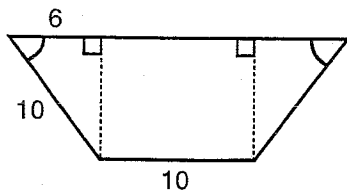
3. This shape is both a rectangle and a



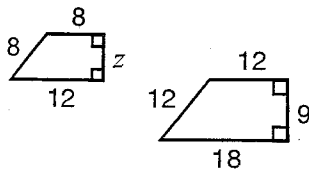
- (A) parallelogram.      (B) rhombus.  
 (C) trapezoid.      (D) square.

4. What is the length of the long base?

- (A) 8  
 (B) 10  
 (C) 16  
 (D) 22



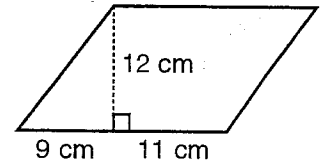
5. These figures are similar. What is the length of  $z$ ?



- (A) 3      (B) 4  
 (C) 6      (D) 8

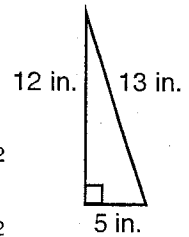
6. What is the perimeter of this figure?

- (A) 32 cm  
 (B) 35 cm  
 (C) 64 cm  
 (D) 70 cm



7. What is the area of this triangle?

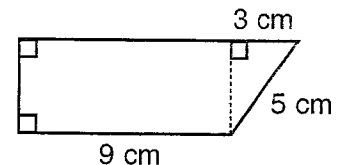
- (A)  $30 \text{ in.}^2$       (B)  $32 \text{ in.}^2$   
 (C)  $60 \text{ in.}^2$       (D)  $65 \text{ in.}^2$



8. Use the formula to determine the area of this trapezoid.

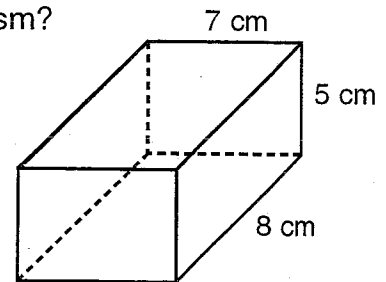
- (A)  $24 \text{ cm}^2$   
 (B)  $30 \text{ cm}^2$   
 (C)  $42 \text{ cm}^2$   
 (D)  $84 \text{ cm}^2$

$$A = \frac{1}{2} h(b_1 + b_2)$$



9. What is the surface area of this right prism?

- (A)  $131 \text{ cm}^2$   
 (B)  $262 \text{ cm}^2$   
 (C)  $280 \text{ cm}^2$   
 (D)  $560 \text{ cm}^2$



10. Which volume formula should be used for a right triangular prism?

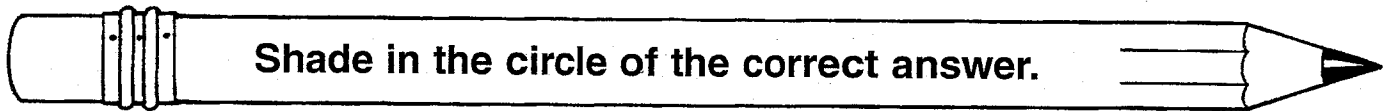
- (A)  $V = s^3$       (B)  $V = Bh$   
 (C)  $V = lwh$       (D)  $V = \frac{4}{3} \pi r^3$

Name \_\_\_\_\_

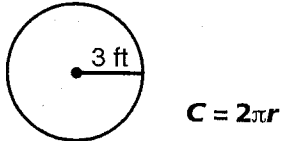
# Assessment D

Date \_\_\_\_\_ Score \_\_\_\_\_ %

## Circles



1. What is the circumference of this circle?  
Use 3.14 for  $\pi$ .

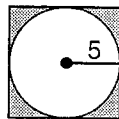


- (A) 9 ft                      (B) 10 ft  
(C) 18 ft                    (D) 19 ft

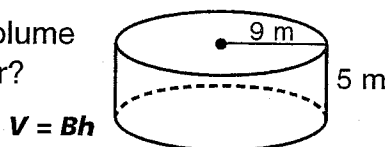
2. What is the area of the shaded region?

Area of a circle =  $\pi r^2$

- (A)  $(25 - 25\pi)$  units<sup>2</sup>  
(B)  $(100 - 25\pi)$  units<sup>2</sup>  
(C)  $(5\pi - 10)$  units<sup>2</sup>  
(D)  $(25\pi + 100)$  units<sup>2</sup>

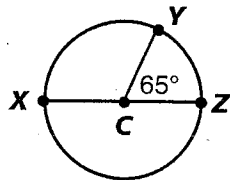


3. What is the volume of this cylinder?



- (A) 45 m<sup>2</sup>                    (B) 45 $\pi$  m<sup>2</sup>  
(C) 81 $\pi$  m<sup>3</sup>                (D) 405 $\pi$  m<sup>3</sup>

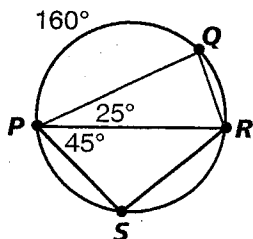
4. Given:  $C$  is the center.  $\overline{XZ}$  is a diameter. Which arc measures 245°?



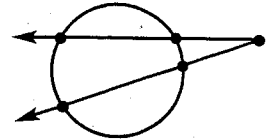
- (A)  $\widehat{XY}$                     (B)  $\widehat{YZ}$   
(C)  $\widehat{YZX}$                 (D)  $\widehat{ZXY}$

5. What is the measure of  $\angle PRQ$ ?

- (A) 65°  
(B) 80°  
(C) 155°  
(D) 160°

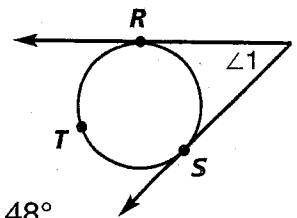


6. This diagram shows the intersection of two



- (A) circles.                      (B) chords.  
(C) secants.                    (D) tangents.

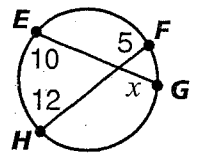
7. Given:  $m\widehat{RS} = 135^\circ$ . What is the measure of  $\angle 1$ ?



- (A) 45°                      (B) 48°  
(C) 67.5°                    (D) 225°

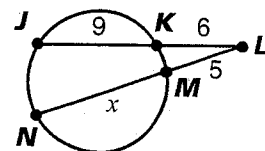
8. What is the length of  $\overline{EG}$ ?

- (A) 6                      (B) 7  
(C) 16                    (D) 17



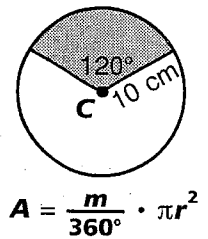
9. What is the length of  $\overline{NM}$ ?

- (A) 13  
(B) 14  
(C) 15  
(D) 16



10. Given:  $C$  is the center. What is the area of the shaded sector?

- (A)  $\frac{1}{3}\pi$  cm<sup>2</sup>  
(B)  $\frac{10}{3}\pi$  cm<sup>2</sup>  
(C) 100 $\pi$  cm<sup>2</sup>  
(D) None of these answers.



$$A = \frac{m}{360} \cdot \pi r^2$$

# Review — Chapter 4

Exercises 1–3 refer to the diagram on the right.  $\overleftrightarrow{BC}$  and  $\overleftrightarrow{EF}$  are parallel.

1. Name two parallel rays. \_\_\_\_\_ [4-1]

2. Name three noncollinear points. \_\_\_\_\_

3. Name the intersection of  $\overleftrightarrow{BD}$  and  $\overleftrightarrow{FE}$ . \_\_\_\_\_

4. 600 cm = \_\_\_\_\_ m

5. 450 m = \_\_\_\_\_ km

6. 5.2 m = \_\_\_\_\_ cm = \_\_\_\_\_ mm

7. If  $AB = 12$  cm, what is the distance from  $A$  to the midpoint? \_\_\_\_\_

8. If  $m\angle A = 42^\circ$ , what is the measure of the complement of  $\angle A$ ? \_\_\_\_\_ [4-3]

9. If  $m\angle B = 42^\circ$ , what is the measure of the supplement of  $\angle B$ ? \_\_\_\_\_

10. Look at the diagram for Exercises 1–3. Name an angle adjacent to  $\angle ABD$ . \_\_\_\_\_

11. One angle of a right triangle measures  $65^\circ$ . What is the measure of the other acute angle? \_\_\_\_\_ [4-4]

12. The sides of a triangle have the following measures: 6 cm, 10 cm, and 6 cm. How could you classify this triangle? \_\_\_\_\_

Name the polygon having the given number of sides.

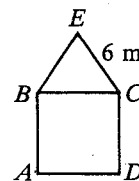
13. 4 \_\_\_\_\_

14. 6 \_\_\_\_\_

15. 8 \_\_\_\_\_ [4-5]

16. What is the perimeter of a regular pentagon whose sides measure 12.5 m each? \_\_\_\_\_

17. In the diagram at the right  $ABCD$  is a square and  $\triangle BCE$  is an equilateral triangle. What is the perimeter of pentagon  $ABECD$ ? \_\_\_\_\_



18. The length of a radius of a circle is 6 cm. What is the length of the diameter? \_\_\_\_\_

19. The circumference of a circle is 62.8 m. What is the radius? Use  $\pi \approx 3.14$ . \_\_\_\_\_ [4-6]

20.  $\triangle ABC \cong \triangle EFG$ . If  $AB = 16$  cm, then what is the measure of  $\overline{EF}$ ? \_\_\_\_\_

21.  $\triangle XYZ \cong \triangle RST$ . If  $m\angle X = 30^\circ$ , what is the measure of  $\angle R$ ? \_\_\_\_\_ [4-7]

22. On another sheet of paper construct a  $150^\circ$  angle. \_\_\_\_\_ [4-8]

# Review — Chapter 10

Find the area of each figure described.

1. rectangle  
length: 6 cm  
width 5 cm \_\_\_\_\_

2. parallelogram [10-1]  
base: 15m  
height: 12 m \_\_\_\_\_

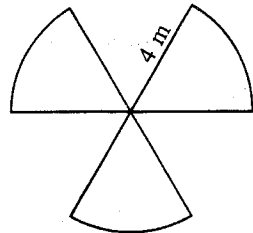
3. triangle  
base: 18 mm  
height: 32 mm \_\_\_\_\_

4. trapezoid [10-2]  
bases: 10 cm and 14 cm  
height 4 cm \_\_\_\_\_

5. circle: Use  $\pi \approx 3\frac{1}{7}$ .  
radius: 28 m \_\_\_\_\_

6. circle: Use  $\pi \approx 3.14$ . [10-3]  
diameter: 10 cm \_\_\_\_\_

7. Draw any lines or points of symmetry.



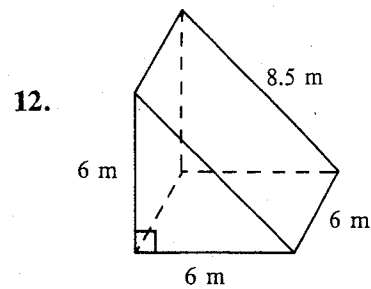
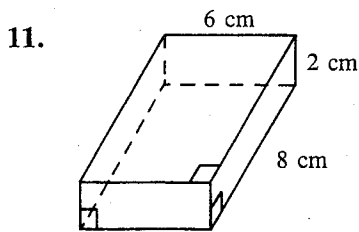
8. Find the area of the symmetric figure. \_\_\_\_\_

Make a sketch of each polyhedron.

9. hexagonal prism

10. pentagonal pyramid [10-5]

Find the volume of each prism or cylinder.



13. cylinder: Use  $\pi \approx 3.14$ .  
diameter: 6 m  
height: 12 m \_\_\_\_\_

14. cylinder: Use  $\pi \approx 3\frac{1}{7}$ . [10-7]  
radius: 14 cm  
height: 6 cm \_\_\_\_\_

The mass of 1 cm<sup>3</sup> of aluminum is 2.9 g. Find the mass of each aluminum item.

15. 3 m<sup>3</sup> \_\_\_\_\_

16. cylinder: Use  $\pi \approx 3.14$ . [10-8]  
radius: 6 cm  
height: 10 cm \_\_\_\_\_

17. Find the surface area of the prism in Exercise 12. \_\_\_\_\_ [10-9]

18. Find the surface area of the cylinder in Exercise 13.  
Use  $\pi \approx 3.14$ . \_\_\_\_\_

# Review — Chapter 6

Exercises 1-2 refer to the diagram at the right. Use the symbol for a line, a ray, or a segment to denote each set of points.

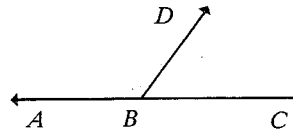


1. The point  $L$  and all points to the left of  $L$ . \_\_\_\_\_ [6-1]
2.  $G$  and  $K$  and all points between  $G$  and  $K$ . \_\_\_\_\_

For Exercise 3, use  $\pi \approx \frac{22}{7}$ .

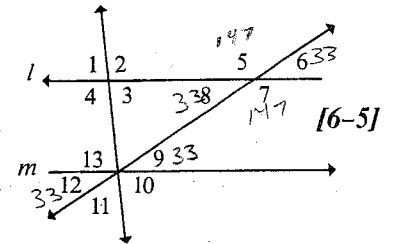
3. Find the circumference of a circle with radius 56. \_\_\_\_\_ [6-2]

Exercises 4-5 refer to the diagram at the right.



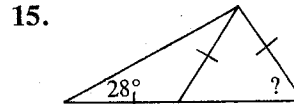
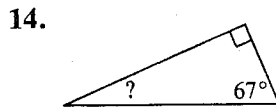
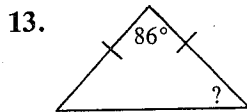
4. Name an acute angle. \_\_\_\_\_ [6-3]
5.  $\angle ABD$  and  $\angle DBC$  are \_\_\_\_\_ angles.
6. Two angles are complementary. The measure of one angle is  $26^\circ$  less than the measure of the other. Find the measure of each. \_\_\_\_\_ [6-4]

In the diagram,  $l \parallel m$ . If  $m\angle 6 = 33^\circ$  and  $m\angle 11 = 62^\circ$ , find the measure of each angle.

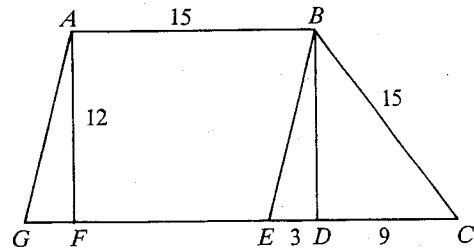


7.  $\angle 5 =$  \_\_\_\_\_
8.  $\angle 8 =$  \_\_\_\_\_
9.  $\angle 7 =$  \_\_\_\_\_
10.  $\angle 9 =$  \_\_\_\_\_
11.  $\angle 12 =$  \_\_\_\_\_
12.  $\angle 4 =$  \_\_\_\_\_

Find the measure of each unknown angle in the triangle.



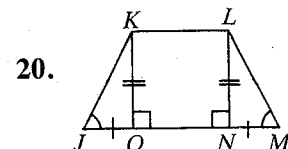
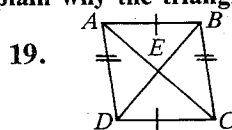
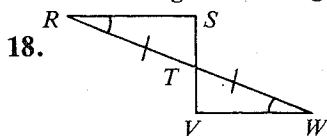
$ABCG$  is a trapezoid.  
 $ABEG$  is a parallelogram.  
 $ABDF$  is a rectangle.



16. Name a segment congruent to  $\overline{AF}$ . \_\_\_\_\_ [6-7]

17. Find the perimeter of  $ABDF$ . \_\_\_\_\_ [6-8]

Name the congruent triangles and explain why the triangles are congruent.



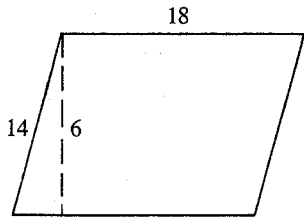
# Review — Chapter 9

1. The area of a triangle is 96. If the base of the triangle is 16, find the height. [9-1]

\_\_\_\_\_

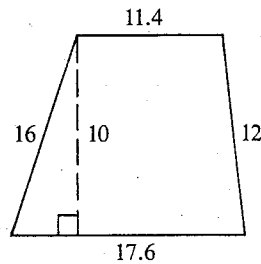
2. A stone walk 2 ft wide surrounds a rectangular garden which is 4 ft by 8 ft. Find the area of the walk. \_\_\_\_\_

3. Find the area of the parallelogram.



\_\_\_\_\_

4. Find the area of the trapezoid. [9-2]

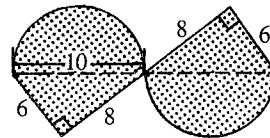


\_\_\_\_\_

5. Find the area of a circle whose circumference is  $34\pi$  m. Use  $\pi \approx 3.14$ . [9-3]

\_\_\_\_\_

6. Find the area of the shaded figure. Use the fact that the figure has symmetry. Use  $\pi \approx 3.14$ . \_\_\_\_\_



[9-4]

7. Find the volume of a cylinder with a base diameter of 28 cm and a height of 7 cm. Use  $\pi \approx \frac{22}{7}$ . [9-5]

\_\_\_\_\_

8. A pyramid has a square base 9 m on a side. If the volume is  $216 \text{ m}^3$ , find the height. [9-6]

\_\_\_\_\_

9. A cone-shaped storage bin has diameter 3 ft and height 5 ft. What is its volume? Use  $\pi \approx 3.14$ . \_\_\_\_\_

10. Find (a) the lateral area and (b) the total surface area of a rectangular prism with base 10 by 13 and height 6. [9-7]

(a) \_\_\_\_\_ (b) \_\_\_\_\_

11. Find (a) the surface area and (b) the volume of a sphere having diameter 6 m. Leave your answers in terms of  $\pi$ . [9-8]

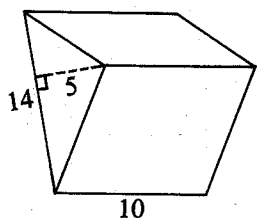
(a) \_\_\_\_\_ (b) \_\_\_\_\_

12. A steel block measures 20 cm by 25 cm by 5 cm, with density  $7.82 \text{ g/cm}^3$ . Find its mass. [9-9]

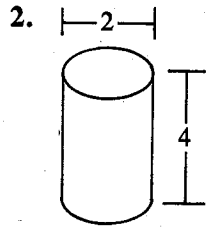
\_\_\_\_\_

**Practice for Lessons 9-5 and 9-6**

**Find the volume of the solid. Use  $\pi \approx 3.14$  when needed.**

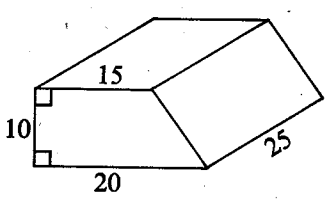


\_\_\_\_\_

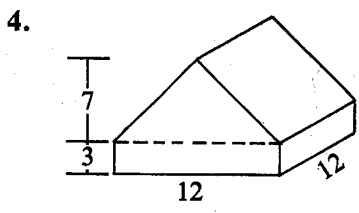


(9-5)

\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

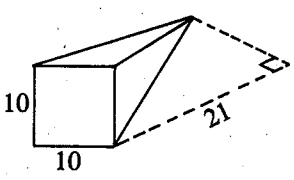
Find the capacity in liters of a square prism with dimensions 5 m by 5 m by 22 m.

\_\_\_\_\_

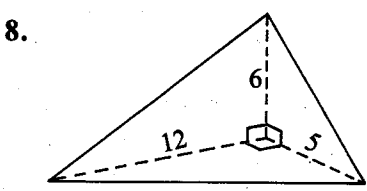
Find the height of a cylinder whose volume is  $56.52 \text{ m}^3$  and whose base radius is 3 m. Use  $\pi \approx 3.14$ .

\_\_\_\_\_

**Find the volume of the solid.**



\_\_\_\_\_



(9-6)

\_\_\_\_\_

Find the capacity in liters of a cone with height 90 cm and base diameter 40 cm. Use  $\pi \approx 3.14$ .

\_\_\_\_\_

A pyramid has volume  $50 \text{ m}^3$  and a square base 5 m by 5 m. Find the height.

\_\_\_\_\_

A clown's conical hat contains  $2669 \text{ cm}^3$  of confetti. If the height of the hat is 25.5 cm, what is the base radius?

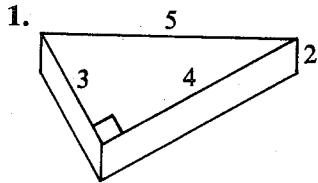
\_\_\_\_\_

A cone has a capacity of 1 L. Find the height if the base radius is 9 cm. Use  $\pi \approx 3.14$ .

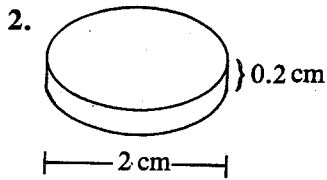
\_\_\_\_\_

## Practice for Lessons 9-7, 9-8, and 9-9

Find (a) the lateral surface area and (b) the total surface area of the prism or cylinder. Use  $\pi \approx 3.14$ .



a. \_\_\_\_\_  
b. \_\_\_\_\_



a. \_\_\_\_\_  
b. \_\_\_\_\_

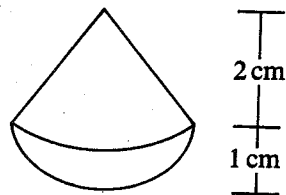
(9-7)

3. The total surface area of a rectangular prism is  $504 \text{ m}^2$ . The dimensions of the base are 10 m and 12 m. Find the height of the prism.
4. A can of paint will cover  $10 \text{ m}^2$ . How many cans are needed to paint 25 fence posts with the dimensions 10 cm by 10 cm by 2 m?

\_\_\_\_\_  
\_\_\_\_\_

Leave your answers in terms of  $\pi$ .

5. Find the surface area and the volume of a sphere having diameter 24.
6. Find the volume of a hemisphere of radius 3.
7. Find the area of a sphere with volume  $288\pi$ .
8. The child's toy shown at the right consists of a hemisphere and a cone. Find its volume.



\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(9-8)

Find the mass of the solid. Use  $\pi \approx 3.14$ .

9. A 3 cm by 3 cm by 10 cm block of steel, density  $7.82 \text{ g/cm}^3$ .
10. A cylinder of pine with diameter of 40 cm, height 1 m, and density of  $0.56 \text{ t/m}^3$ .
11. A spherical balloon with diameter 20 cm is filled with helium of density  $0.00018 \text{ g/cm}^3$ . Find the mass of the helium.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(9-9)