

Geometry CP – Final Exam Review



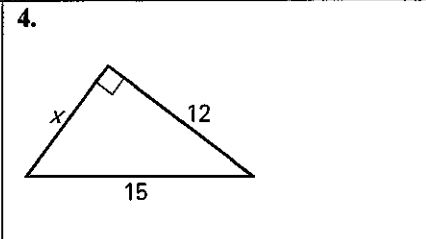
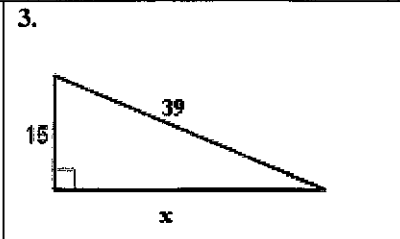
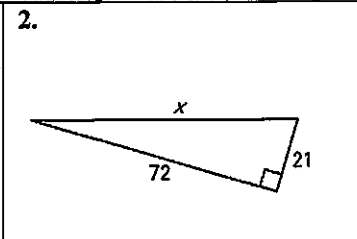
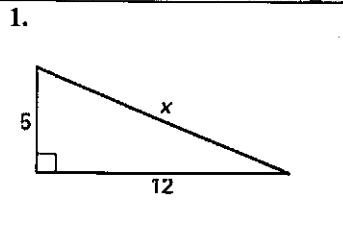
- **GET ORGANIZED.** Successful studying begins with being organized. Bring this packet with you to class every day.
- **DO NOT FALL BEHIND.** Do the problems that are assigned every night and come to class prepared to ask about the things you could not do.
- **GET SERIOUS.** The grade you earn on this exam is worth **20% of your semester grade.**
- **MAKE NOTES AS YOU WORK.** As you do these problems, you will come across formulas, definitions, problems, and graphs that you will want to put on your notecard.
- **NOTECARD:** Your notecard must be in your own writing. You may put on it anything you think will help you on the exam. You may use the front and back. You will turn it in with your exam.
- There is nothing on the exam that you have not studied this year.
- This packet is worth a **HUGE homework grade.**

Final Review Assignments

Chapter	Due Date	<input checked="" type="checkbox"/>
7		
8		
10		
11		
12		

5th Hour Exam: Thursday, June 13th 8:00- 9:45
6th Hour Exam: Thursday, June 13th 9:45-11:15

Find the unknown side length. Write your answer in simplest radical form.

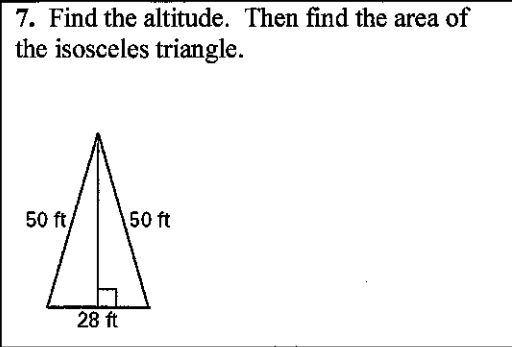


Find the indicated value. Write your answer in simplest radical form.

5. Randy made a ramp for his dog to get into his truck. The ramp is 6 ft long and the bed of the truck is 3 ft above the ground. Approximately how far from the back of the truck does the ramp touch the ground?

A. 3 ft. B. 4 ft.
C. 5.2 ft. D. 6.7 ft.

6. Find the area of the isosceles triangle with side lengths 20 in., 20 in., and 24 in.

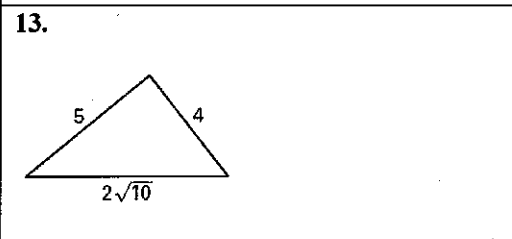
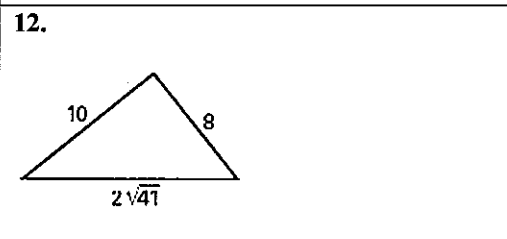
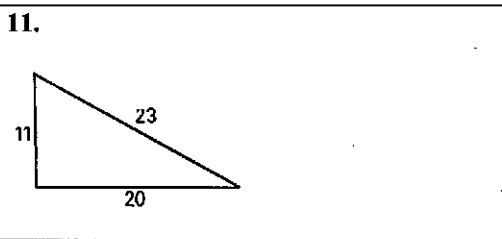


Classify the triangle by the side lengths as acute, right, or obtuse.

8. 7, 11, and $3\sqrt{17}$

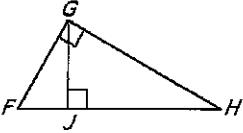
9. $\frac{3}{2}$, 2, and $\frac{5}{2}$

10. 4.1, 9.2, and 5.6

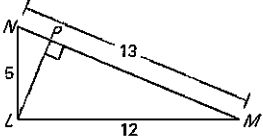


Find the indicated values. Leave answers in simplest radical form.

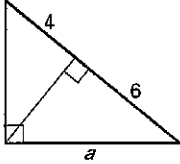
14. Identify the similar triangles in the diagram.



15. Identify the similar triangles in the diagram.

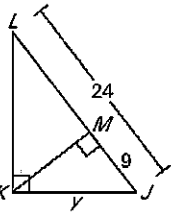


16. Find the value of a .

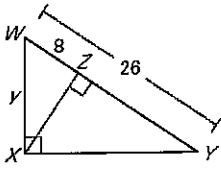


17. Skip!

18. Find the values of y , KL , and KM .

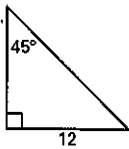


19. Find the values of y , XZ , YZ , and XY .

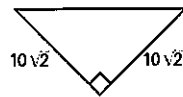


Using special right triangles, find the values of the variable(s). Write your answer(s) in simplest radical form.

20. Find the value of the hypotenuse.

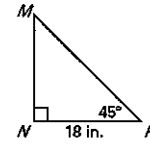


21. Find the value of the hypotenuse.

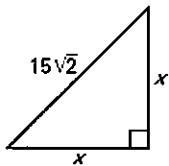


22. $\triangle MNP$ is a right triangle. Find the length of \overline{MP} .

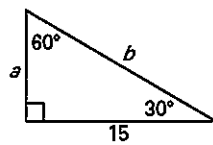
- A. 18 in. B. $9\sqrt{2}$ in.
C. 36 in. D. $18\sqrt{2}$ in.



23.

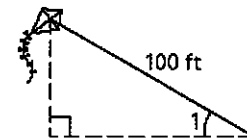


24.



25. A kite is attached to a 100 foot string as shown in the diagram. How far above the ground is the kite when the string forms the given angle?

- A. $m\angle 1 = 45^\circ$ B. $m\angle 1 = 30^\circ$

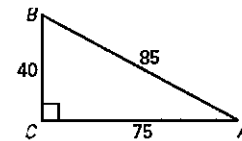


Find the following trig functions. Write your answers as simplified fractions.

26. Using a special right triangle, find the three trig functions of 45° .

27. Using a special right triangle, find the three trig functions of 30° .

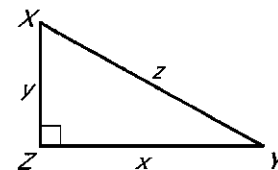
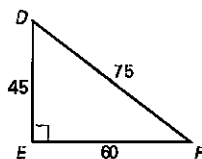
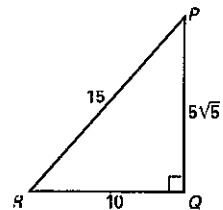
28. Find all three trig functions of angle B.



29. Find all three trig functions of angle P.

30. Find all three trig functions of angle F.

31. If $z = 12$ and $x = 6$, find $\sin X$ to the nearest tenth.

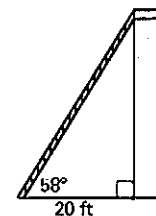
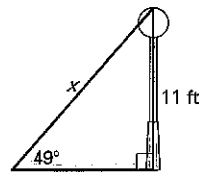
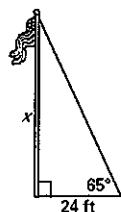


Find the value of the variable to the nearest tenth.

32. Find the height (x) of the flagpole to the nearest foot.

33. A lamppost is 11 feet tall. If the angle of elevation through the top of the lamppost to the sun is 49° , about how far is the top of the lamppost from the tip of its shadow?

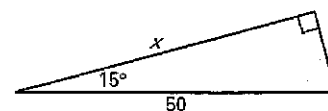
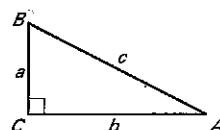
34. A rope, staked 20 feet from the base of a building, goes to the roof and forms an angle of 58° with the ground. How long is the rope?



35. A road rises 10 feet in a horizontal distance of 200 feet. What is the angle of elevation?

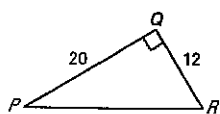
36. If $a = 17$ and $m\angle A = 31^\circ$, find b .

37. Find x .



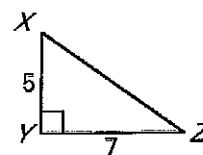
Use a calculator and inverse trig functions to find the following values to the nearest tenth.

38. $m\angle P$



39. $\cos B = 0.56$

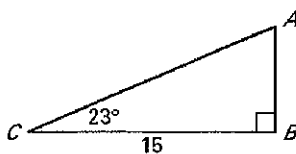
40. $m\angle Z$



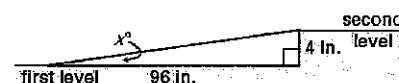
Solve the following triangles. Round decimals to the nearest tenth.

41. Solve a right triangle that has a 50° angle and a 15 inch hypotenuse.

42.



43. You are building a track for a model train. You want the track to incline from the first level to the second level, 4 inches higher in 96 inches. Is the angle of elevation less than 3° ?



◆ Chapter 7 Final Exam Review Answers

1. $x = 13$ 2. $x = 75$ 3. $x = 36$ 4. $x = 9$ 5. C 6. 192 in^2 7. 672 ft^2 8. Acute

9. right 10. obtuse 11. obtuse 12. right 13. acute 14. $\triangle FGH \sim \triangle GJH \sim \triangle FJG$

15. $\triangle NLM \sim \triangle LPM \sim \triangle NPL$ 16. $a = 7.75$ 17. skip! 18. $y = 14.7$, $LK = 18.97$, $KM = 11.6$

19. $YZ = 18$, $XY = 21.6$, $XZ = 12$, $y = 14.4$ 20. $12\sqrt{2}$ 21. 20 22. D 23. $x = 15$

24. $a = 5\sqrt{3}$, $b = 10\sqrt{3}$ 25. $50\sqrt{2}$, 50 26. $\cos 45 = \frac{\sqrt{2}}{2}$, $\sin 45 = \frac{\sqrt{2}}{2}$, $\tan 45 = 1$

27. $\cos 30 = \frac{\sqrt{3}}{2}$, $\sin 30 = \frac{1}{2}$, $\tan 30 = \frac{\sqrt{3}}{3}$ 28. $\sin B = \frac{15}{17}$, $\tan B = \frac{15}{8}$, $\cos B = \frac{8}{17}$

29. $\sin P = \frac{2}{3}$, $\cos P = \frac{\sqrt{5}}{3}$, $\tan P = \frac{2\sqrt{5}}{5}$ 30. $\sin F = \frac{3}{5}$, $\cos F = \frac{4}{5}$, $\tan F = \frac{3}{4}$

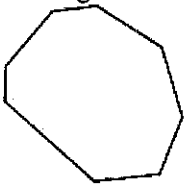
31. $\sin X = \frac{1}{2}$ 32. $x = 51$ 33. $x = 14.58$ 34. $x = 37.74$ 35. $x = 2.86^\circ$

36. $x = 28.29$ 37. $x = 48.30$ 38. 31.0° 39. 55.9° 40. 35.5°

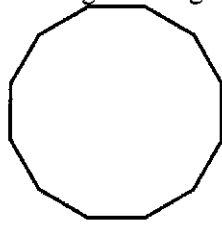
41. 40° , 11.49, 9.64 42. 16.3, 6.4, 67° 43. yes, 2.4°

Find the values as indicated:

1. The sum of the interior and exterior angles of an octagon.

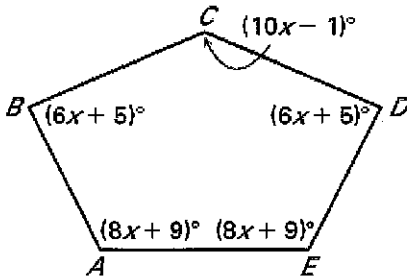


2. The measure of each interior and exterior angle of a regular dodecagon.

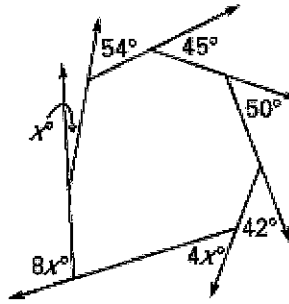


3. Find the number of sides of a convex polygon whose interior angle sum is 3780° .

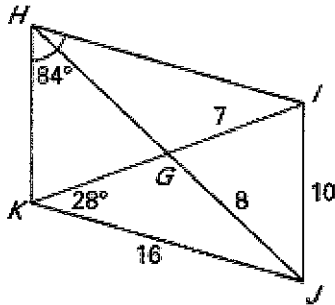
4. Find the value of x and $m\angle C$.



5. Find the value of x .

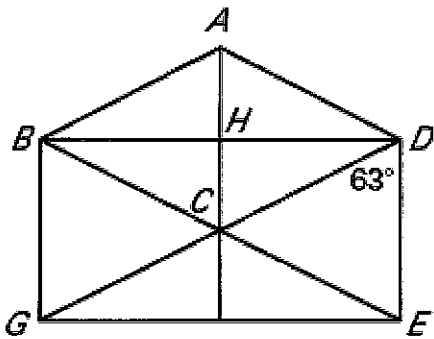


Find the value of each variable in the parallelogram shown.



6. KI	7. HI	8. HK
9. $m\angle HKJ$	10. $m\angle KJI$	11. $m\angle KIJ$

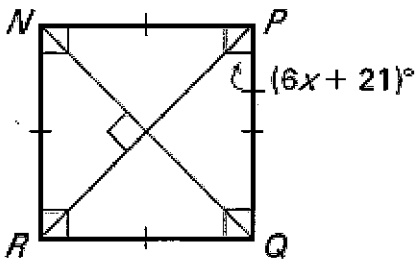
In the diagram shown, $BDEG$ is a rectangle and $ABCD$ is a rhombus. Find the measure of the indicated angle.



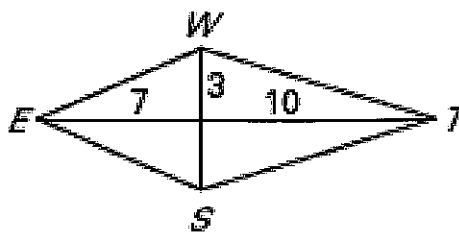
12. $\angle GDB$	13. $\angle ADB$	14. $\angle AHD$	15. $\angle HAD$
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Find the indicated side or angle:

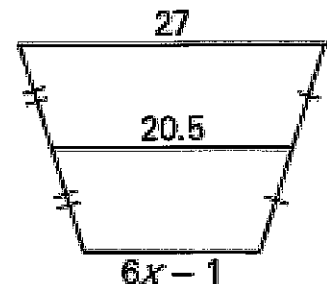
16. Find the value of x .



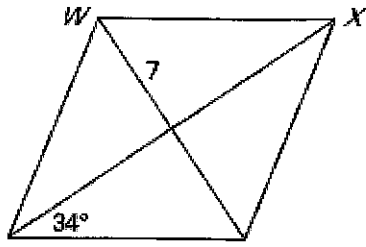
17. WEST is a kite. Find WS and WT.



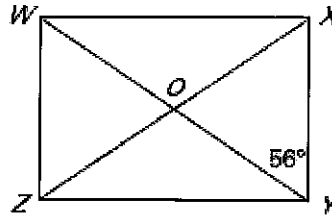
18. Find the value of x



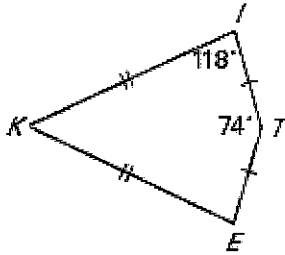
19. Given this rhombus, find WX (trig)



20. Find the perimeter of rectangle WXYZ given $WO=5$ (trig).



KITE is a kite. Find the following angles:



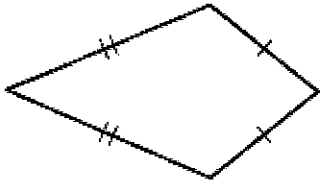
21. $\angle E$

22. $\angle K$

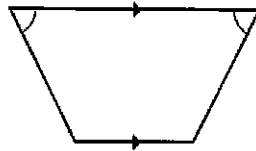
23. The intersection of KT and IE.

Classify the following quadrilaterals

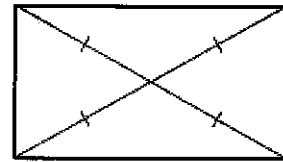
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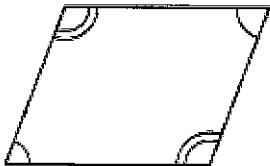
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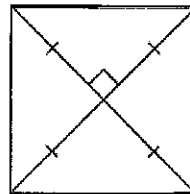
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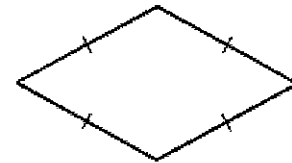
27.



28.



29.



Find the slopes and lengths of the sides of quad DEFG. Classify the quad based on the information of its sides.

30.

$$D(6, 8), E(9, 12), F(12, 8), G(9, 6)$$

31.

$$D(-2, 10), E(1, 13), F(5, 13), G(-2, 6)$$

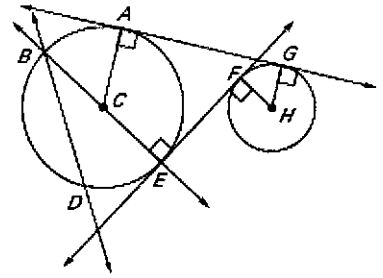
◆ Chapter 8 Final Exam Review Answers

1. Int – 1080 / Ext – 360
2. Int – 150 / Ext – 30
3. 23
4. $x = 13.5$, $C = 134$
5. $x = 13$
6. 14
7. 16
8. 10
9. 96
10. 84
11. 68
12. 27
13. 27
14. 90
15. 63
16. 4
17. 6, 10.44
18. 2.5
19. 12.52
20. 27.76
21. 118
22. 50
23. All 90's
24. Kite
25. Isosceles Trapezoid
26. Rectangle
27. Parallelogram
28. Square
29. Rhombus
30. Kite
31. Isosceles Trapezoid

Chapter 10 Final Exam Review

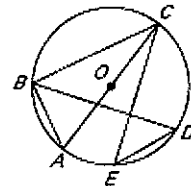
Use the diagram to give the best name for the following

- | | |
|--------------------|--------------------|
| 1. F | 2. \overline{FE} |
| 3. \overline{HG} | 4. \overline{DB} |
| 5. C | 6. \overline{BE} |
| 7. \overline{DB} | 8. \overline{AG} |



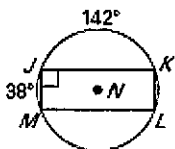
Find the indicated measure in circle O, given $m\widehat{CD} = 85^\circ$ and $m\widehat{BE} = 97^\circ$.

- | | |
|---------------------|----------------------|
| 9. $m\angle ABC$ | 10. $m\angle CED$ |
| 11. $m\angle BDE$ | 12. $m\angle CBD$ |
| 13. $m\angle ABD$ | 14. $m\angle BCE$ |
| 15. $m\widehat{AD}$ | 16. $m\widehat{ABC}$ |

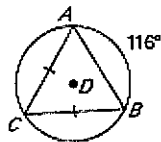


Find the indicated measure.

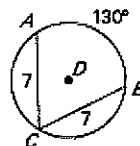
17. $m\widehat{KLM}$



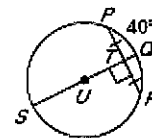
18. $m\widehat{BC}$



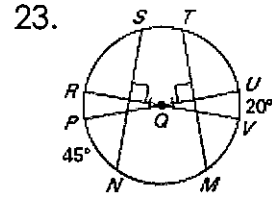
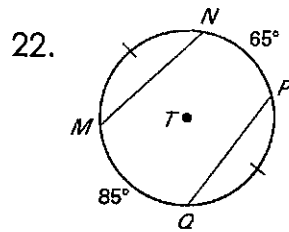
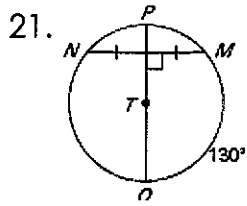
19. $m\widehat{AC}$



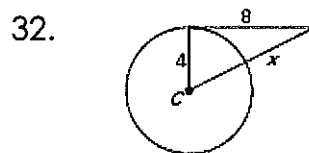
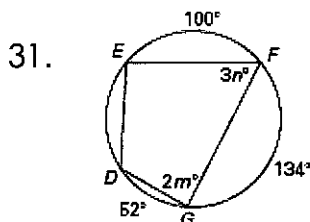
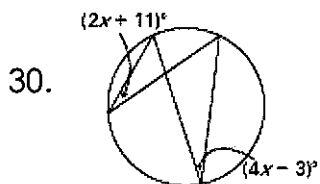
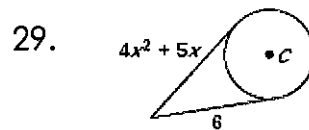
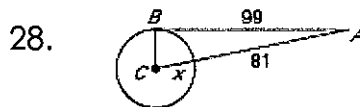
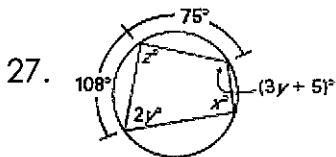
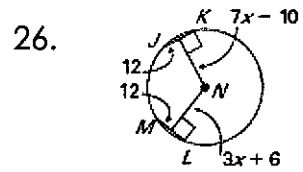
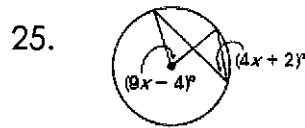
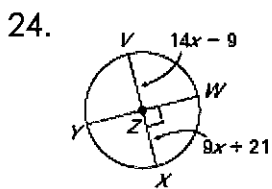
20. $m\widehat{PQR}$



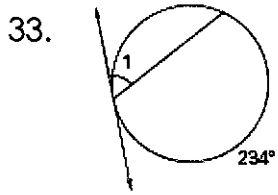
Find the measure of \widehat{MN} .



Find the value of the variables. Assume that segments that appear to be tangent, are tangent.



Find the $m\angle 1$.



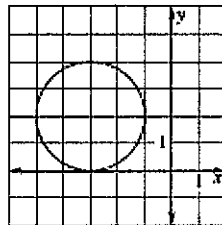
Use the given information to write the standard equation of a circle.

34. Center $(-3, 1)$, radius: 5

35. Center $(2, 4)$, pt on the circle $(-3, 16)$

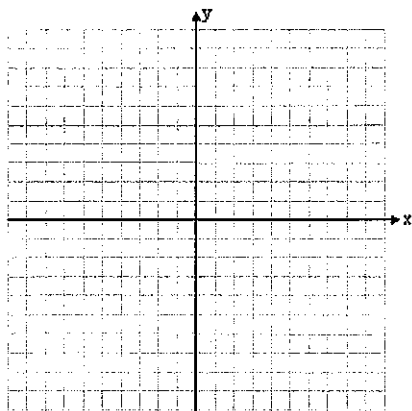
36. Write the standard equation of a circle whose diameter has endpoints at $(0, 5)$ and $(4, 3)$.

37. Write the standard equation of the circle.

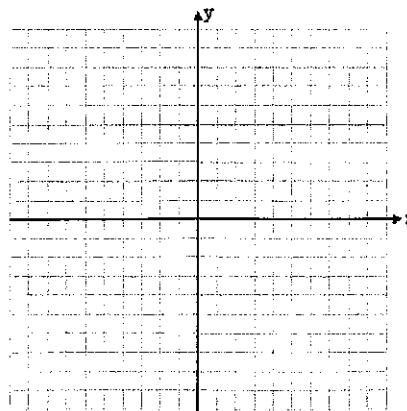


38. Graph the circle on the axes below. State the center and radius.

a) $(x - 3)^2 + (y + 4)^2 = 16$



b) $(x+2)^2 + y^2 = 50$



Rewrite the following equations of a circle into standard form by completing the square. Then state the center and the radius.

39. $x^2 - 8x + 16 + y^2 + 2y + 4 = 25$

40. $x^2 + 6x + y^2 - 2y = 2$

center: radius:

center: radius:

41. $x^2 + 2x + y^2 - 6y = 10$

42. $x^2 + 6x + y^2 - 4y = 12$

center: radius:

center: radius:

◆ Chapter 10 Final Exam Review Answers

1. point of tangency 2. common tangent 3. radius 4. chord 5. center

6. diameter 7. secant 8. common tangent 9. 90 10. 42.5 11. 48.5

12. 42.5 13. 47.5 14. 48.5 15. 95 16. 180 17. 180 18. 122

19. 115 20. 80 21. 100 22. 105 23. 70 24. 6

25. 8 26. 4 27. $x = 91.5, y = 35, z = 88.5$ 28. 20 29. $x = -2, 3/4$

30. 7 31. $n = 21, m = 43.5$ 32. 4.94 33. 63 34. $(x+3)^2 + (y-1)^2 = 25$

35. $(x-2)^2 + (y-4)^2 = 169$ 36. $(x-2)^2 + (y-4)^2 = 5$ 37. $(x+3)^2 + (y-2)^2 = 4$

38. see online key 39. $(x-4)^2 + (y+1)^2 = 22$ C: (4, -1) R: $\sqrt{22}$

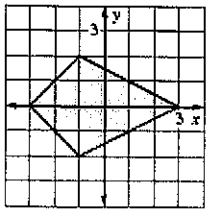
40. $(x+3)^2 + (y-1)^2 = 12$ C: (-3, 1) R: $2\sqrt{3}$ 41. $(x+1)^2 + (y-3)^2 = 20$ C: (-1, 3) R: $2\sqrt{5}$

42. $(x+3)^2 + (y-2)^2 = 25$ C: (-3, 2) R: 5

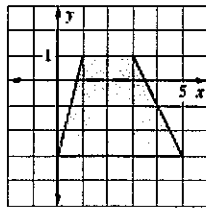
Chapter 11 Final Review

Find the area of the shaded figure shown.

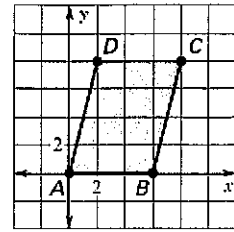
1. _____



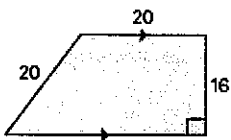
2.



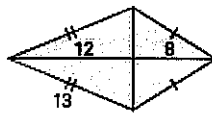
3.



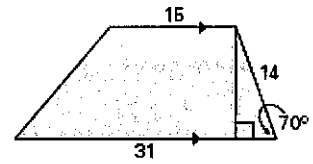
4.



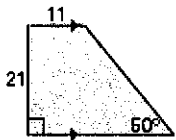
5.



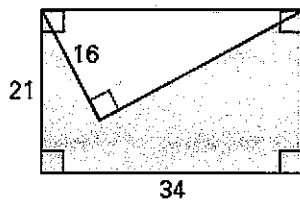
6.



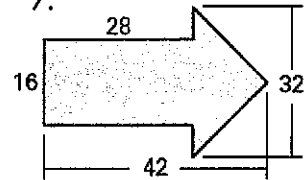
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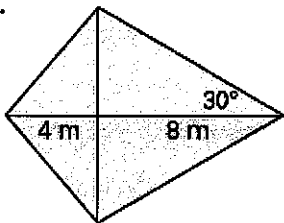
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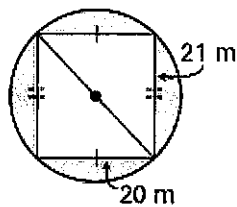
9.



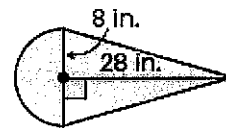
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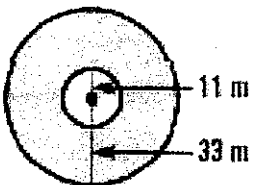
11.



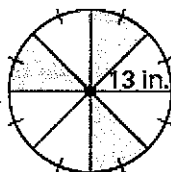
12.



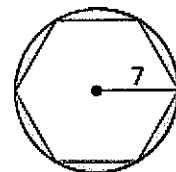
13.



14.

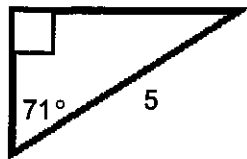


15.

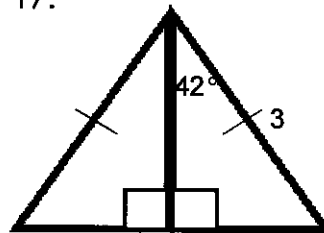


Find the area of the triangles below.

16.

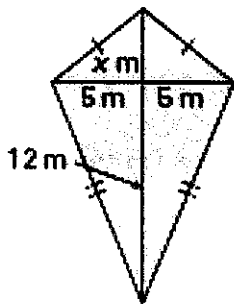


17.

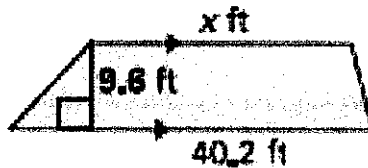


Use the given area to find the value of x .

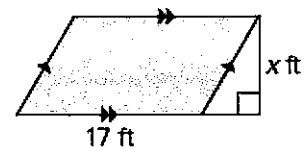
18. Area = 80m^2



19. Area = 288.96 ft^2



20. Area = 153 ft^2



Algebra

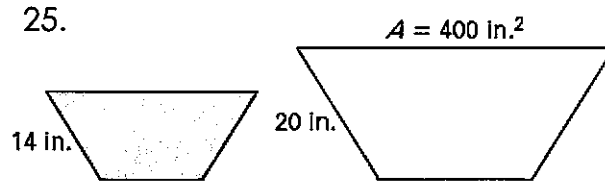
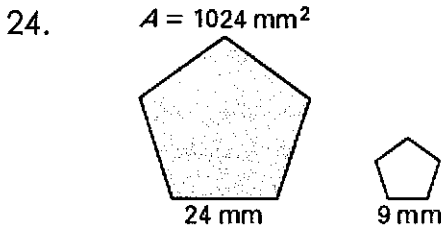
21. The area of a triangle is 54 square units. The base of the triangle is three times the height. Find the base and the height.

22. The area of a parallelogram is 80 square centimeters. The height of the parallelogram is four fifths its base. Find the base and the height.

23. Complete the table of ratios for similar polygons.

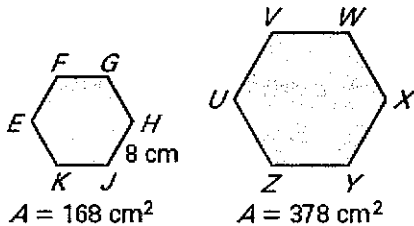
Ratio of corresponding side lengths	Ratio of perimeters	Ratio of areas
3 : 4		
		144 : 25
	3 : 7	

Corresponding lengths in similar figures are given. Find the ratios (shaded to unshaded) of the perimeters and areas. Find the unknown area.

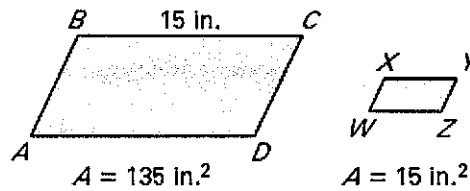


Use the given area to find XY.

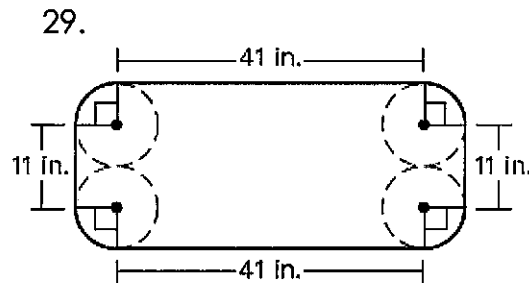
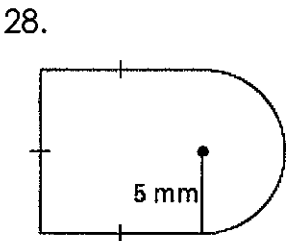
26. $EFGHJK \sim UVWXYZ$



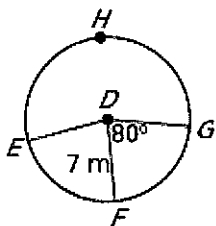
27. $ABCD \sim WXYZ$



Find the perimeter of the figure.



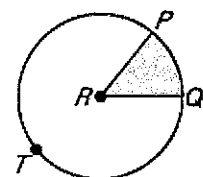
30. **Use the diagram to find the indicated measure.** In circle D, $\angle EDF \cong \angle FDG$



- a) measure arc EFG b) measure arc EHG c) length of arc EFG
 d) length arc EHG e) measure arc EHF f) length of arc FEG

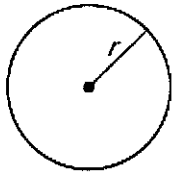
31. The area of circle R is 295.52 in.^2 . The area of sector PRQ is 55 in.^2 . Find the indicated measure.

- a) Radius of circle R b) Circumference of circle R
 c) measure arc PQ d) length arc PQ



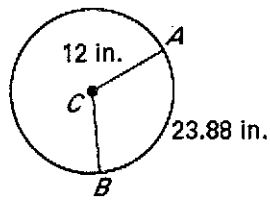
Use the diagram to find the indicated measure.

32. Find the radius.

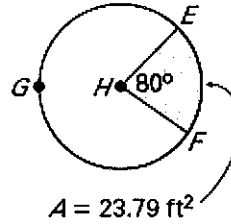


$C = 65.98 \text{ cm}$

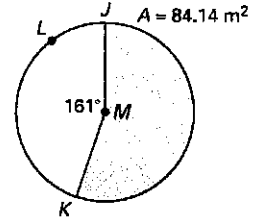
33. $m\widehat{AB}$



34. Find the area of $\odot H$.

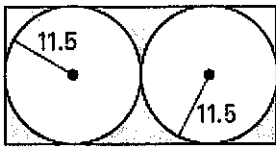


35. Find the radius of $\odot M$.

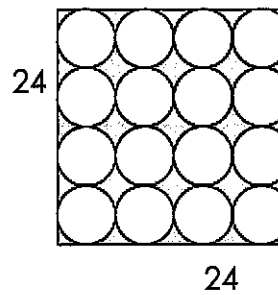


Find the area of the shaded region.

36.



37.



Find the measure of a central angle of a regular polygon with the given number of sides.

38. 12 sides

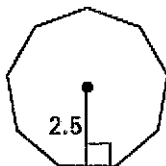
39. 30 sides

40. 16 sides

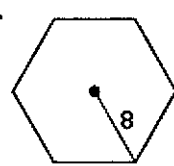
41. A regular octagon has a radius of 11.5 inches. What is the length of its apothem?

Find the perimeter and area of the regular polygon.

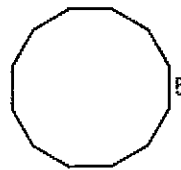
42.



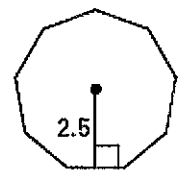
43.



44.



45.



Find the probability that a point K , selected randomly on \overline{AE} , is on the given segment. Express your answer as a fraction, decimal, and percent.

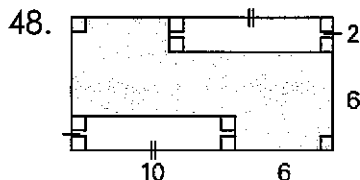
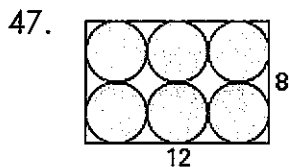


46. a) AB

b) BD

c) BE

Find the probability that a randomly selected point lies in the shaded region of the figure below.

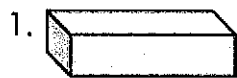


◆ Chapter 11 Final Exam Review Answers

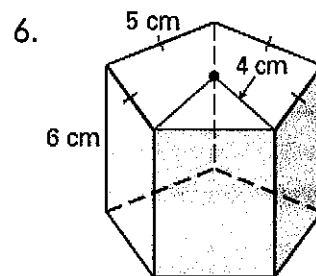
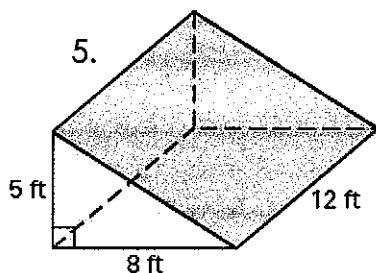
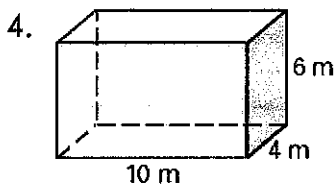
- | | | | | | | |
|-------------------------|--------------------------------------|------------|----------------------------|--------------------------|-------------|-----------------|
| 1. 12 | 2. 14 | 3. 48 | 4. 416 | 5. 100 | 6. 302.68 | 7. 415.8 |
| 8. 474 | 9. 672 | 10. 55.43 | 11. 240.52 | 12. 324.53 | 13. 3041.06 | 14. 199.09 |
| 15. 26.67 | 16. 3.85 | 17. 4.48 | 18. 4 | 19. 20 | 20. 9 | 21. $h=6, b=18$ |
| 22. $h=8, b=10$ | 23. 3:4, 9:16, 12:5, 12:5, 3:7, 9:49 | 24. 144 | 25. 196 | | | |
| 26. 12 | 27. 5 | 28. 45.71 | 29. 138.56 | 30a. 160 | 30b. 200 | 30c. 19.55 |
| 30d. 24.42 | 30e. 280 | 30f. 34.21 | 31a. 9.7 | 31b. 60.95 | 31c. 66.98 | 31d. 11.34 |
| 32. 10.50 | 33. 114.02 | 34. 107.06 | 35. 6.96 | 36. 227.05 | 37. 123.61 | 38. 30 |
| 39. 12 | 40. 22.5 | 41. 10.62 | 42. $A = 20.47, P = 16.38$ | 43. $P = 48, A = 166.28$ | | |
| 44. $P = 60, A = 279.9$ | 45. skip | 46a. $1/8$ | 46b. $5/8$ | 46c. $7/8$ | 47. 78.5% | |
| 48. 68.75% | | | | | | |

Chapter 12 Review

Determine whether the solid is a polyhedron. If it is, name the polyhedron. If not, write no.

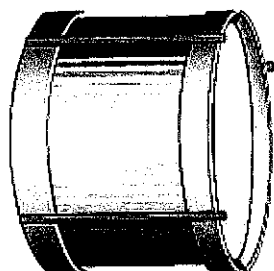


Find the surface area of the right prism. Round your answers to two decimal places.

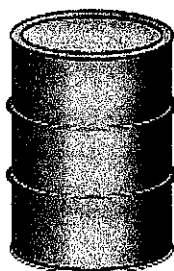


Find the surface area of the right cylinder using the given radius and height. Round your answers to two decimal places.

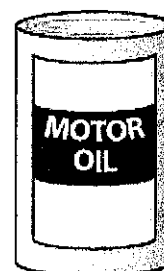
7. $r = 12$ in.; $h = 18$ in.



8. $r = 1.1$ ft; $h = 3.2$ ft

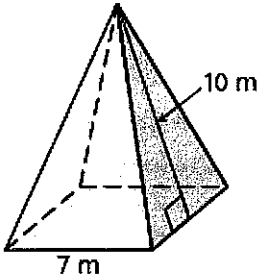


9. $r = 5$ cm; $h = 15$ cm

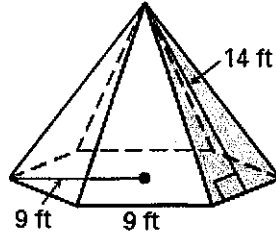


Find the surface area of the regular pyramid. Round your answer to two decimal places.

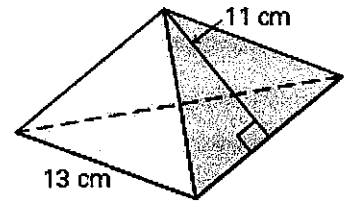
10.



11.

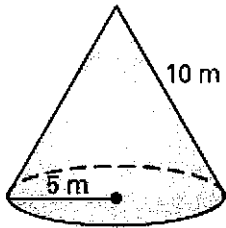


12.

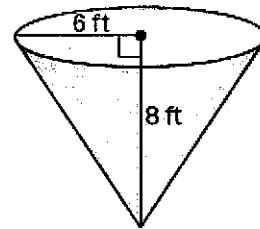


Find the EXACT lateral area of the right cone. Round your answer to two decimal places.

13.

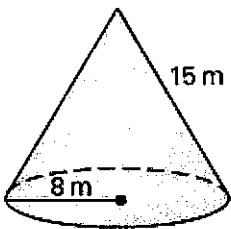


14.

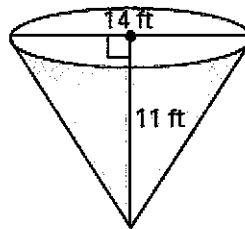


Find the surface area of the right cone. Round your answers to two decimal places.

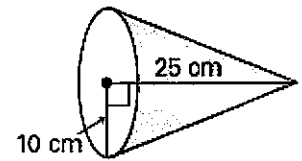
15.



16.

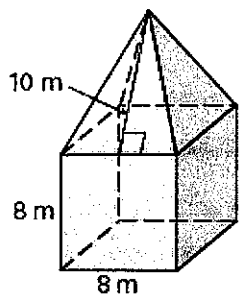


17.

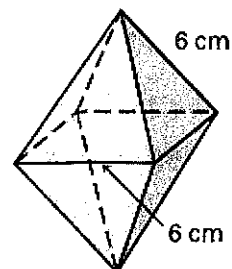


Find the surface area and volume of the solid.

18.

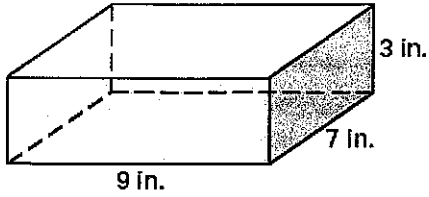


19.

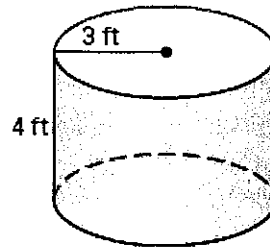


Find the volume of the right cylinder or right prism. Round your answers to two decimal places.

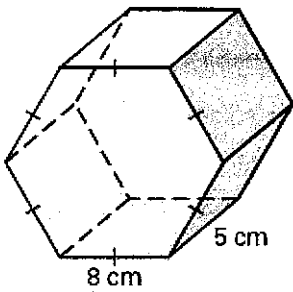
20.



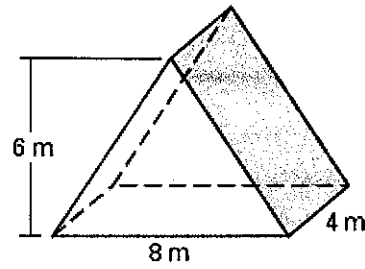
21.



22.

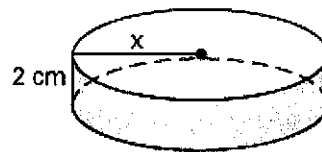


23.

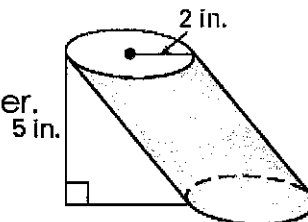


24. Find the length x using the given volume.

$$V = 72\pi \text{ cm}^3$$

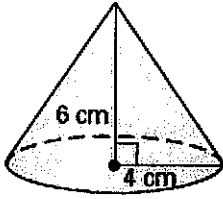


25. Find the EXACT volume of the oblique cylinder.

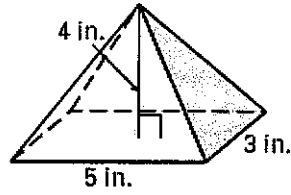


Find the volume of solid.

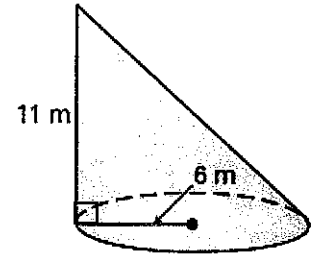
26.



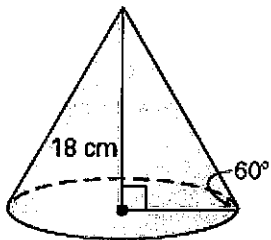
27.



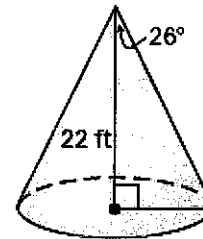
28.



29.

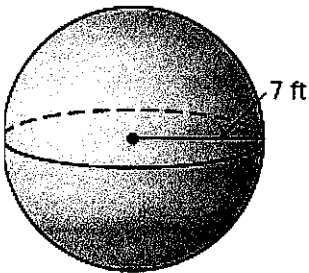


30.

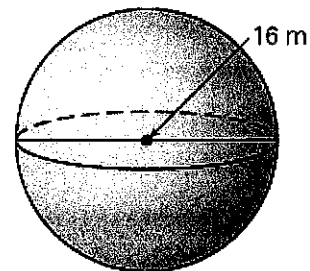


Find the surface area and volume of the spheres.

31.



32.



Find the radius of the sphere with the given volume V . Round your answers to two decimal places.

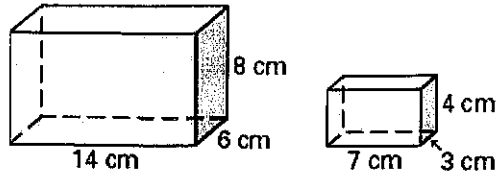
33. $V = 64 \text{ in.}^3$

34. $V = 150\pi \text{ cm}^3$

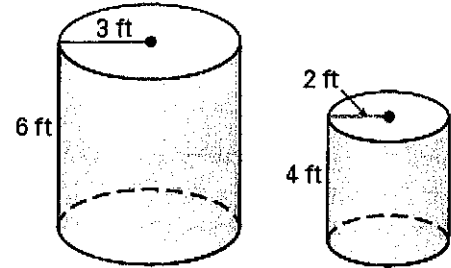
35. A rectangular box has a volume of 1440 cubic meters, a length of 15 m and a height of 8 meter. Find the width.

Tell whether the pair of right solids is similar. If so, determine the scale factor.

36.



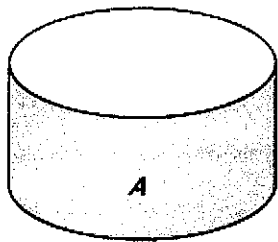
37.



Solid A (shown) is similar to Solid B (not shown) with the given scale factor of A to B. Find the surface area and volume of solid B.

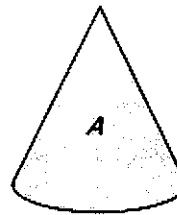
38. Scale factor of 1:2

$$S = 42\pi \text{ ft}^2, V = 36\pi \text{ ft}^3$$



39. Scale factor of 1:3

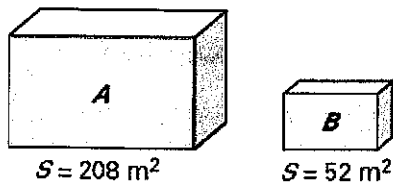
$$S = 96\pi \text{ m}^2, V = 96\pi \text{ m}^3$$



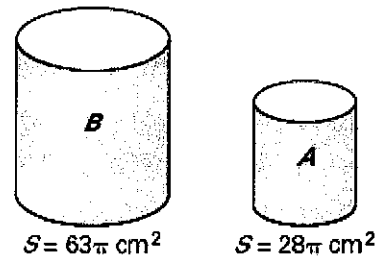
40. Two right cylinders are similar. The surface areas are 24π and 96π . What is the ratio of the volumes of the cylinders?

Solid A is similar to Solid B. Find the scale factor of Solid A to Solid B.

41.



42.



43. Two cones have a scale factor of 2:5. The smaller cone has a surface area of 96π square yards. Find the EXACT surface area of the larger cone.

◆ Chapter 12 Final Exam Review Answers

- | | | | | | |
|-------------------------------------|-------------------------------------|--------------------|----------------------|-------------------------------|---------------------------|
| 1. rectangular prism | 2. No | 3. NO | 4. 248 | 5. 308.8 | 6. 231 |
| 7. 720π | 8. 29.72 | 9. 200π | 10. 189 | 11. 588.44 | 12. 287.68 |
| 13. 157.08 | 14. 188.50 | 15. 184π | 16. 440.67 | 17. $100\pi + 50\pi\sqrt{21}$ | 18. $S=480,$
$V=706.1$ |
| 19. $S=124.8, V=101.76$ | 20. 189 | 21. 36π | 22. $480\sqrt{3}$ | 23. 96 | 24. 6 |
| 25. 20π | 26. 32π | 27. 20 | 28. 414.69 | 29. 2034.85 | 30. 2652.47 |
| 31. $S=196\pi, V=\frac{1372\pi}{3}$ | 32. $S=256\pi, V=\frac{2048\pi}{3}$ | 33. 2.48 | 34. 4.83 | 35. 12 | |
| 36. 2:1 | 37. 3:2 | 38. 527.79, 904.78 | 39. 2714.34, 8143.01 | | |
| 40. 1:8 | 41. 2:1 | 42. 2:3 | 43. 600π | | |