

High School Math TEKS Focus
Objective Eight

8.8(A)

Find surface areas of prisms and cylinders using concrete models and nets (two-dimensional models)

23 For small paving jobs, a contractor uses a roller pushed by a worker.



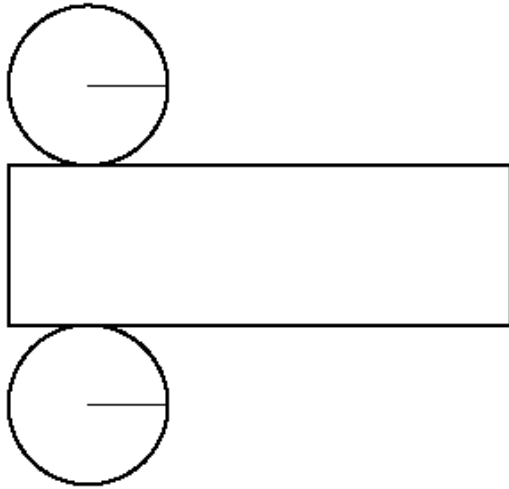
To the nearest square inch, what is the area of pavement with which the surface of the roller will come into contact in one complete rotation?

- A 753 in.²
- B 1,507 in.²
- C 1,708 in.²
- D 1,909 in.²

8.8A 8th Grade 2003

**High School Math TEKS Focus
Objective Eight**

- 13 Mrs. Juárez has a cylindrical pincushion with the net shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the net in centimeters.



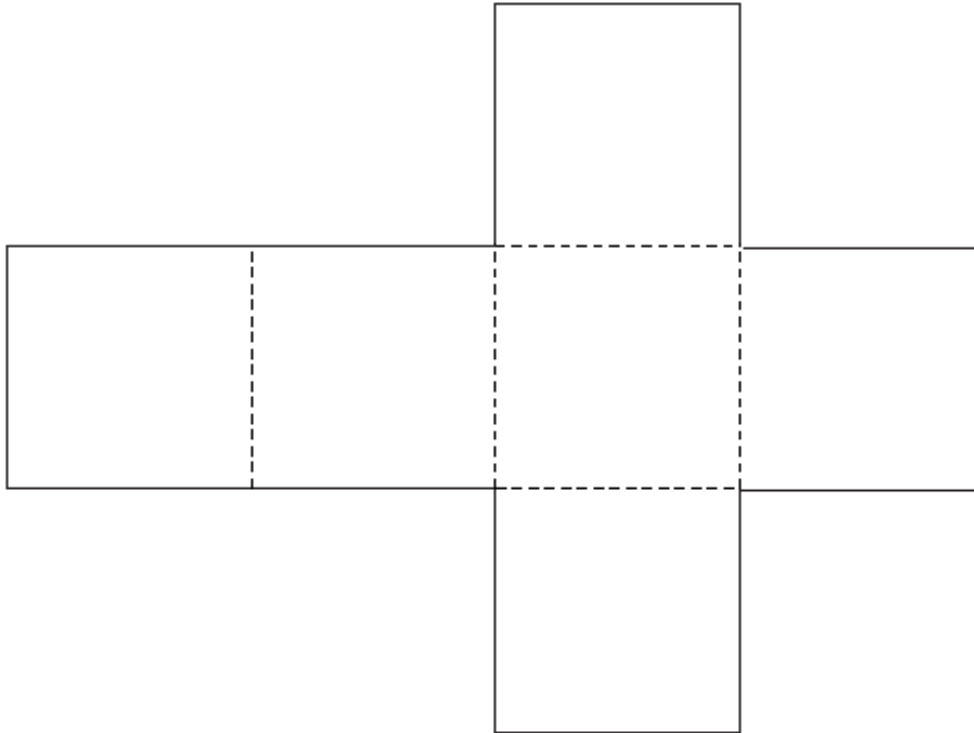
Which is closest to the lateral surface area of the cylindrical pincushion?

- A 3.0 cm^2
- B 6.3 cm^2
- C 9.4 cm^2
- D 12.6 cm^2

8.8A 8th Grade 2004

High School Math TEKS Focus
Objective Eight

35 The net of a cube is shown below.



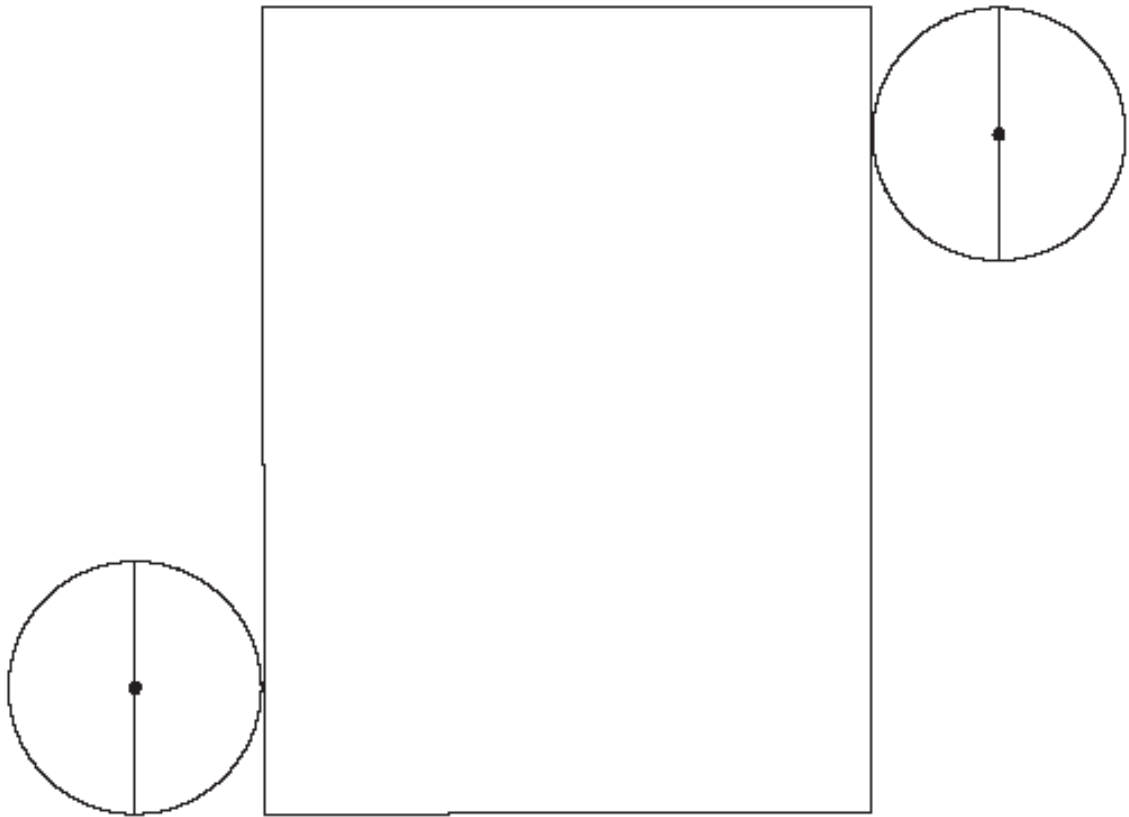
Use the ruler on the Mathematics Chart to measure the dimensions of the cube to the nearest $\frac{1}{4}$ inch.
Find the surface area of the cube to the nearest square inch.

- A 2 in.²
- B 9 in.²
- C 14 in.²
- D 18 in.²

8.8A 9th Grade 2004

HIGH SCHOOL Math TEKS Focus
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- 26 The net of a cylinder is shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the cylinder to the nearest $\frac{1}{8}$ inch.



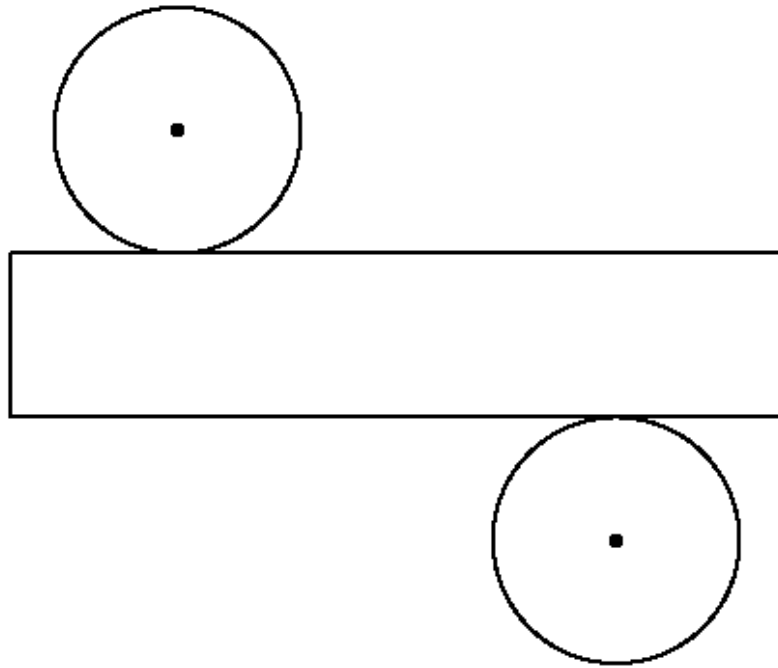
Which is closest to the total surface area of this cylinder?

- F** 4 in.²
- G** 11 in.²
- H** 14 in.²
- J** 25 in.²

8.8A 9th Grade 2003

HIGH SCHOOL Math TEKS FOCUS
Objective Eight

- 50 The net of a cylinder is shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the cylinder to the nearest tenth of a centimeter.



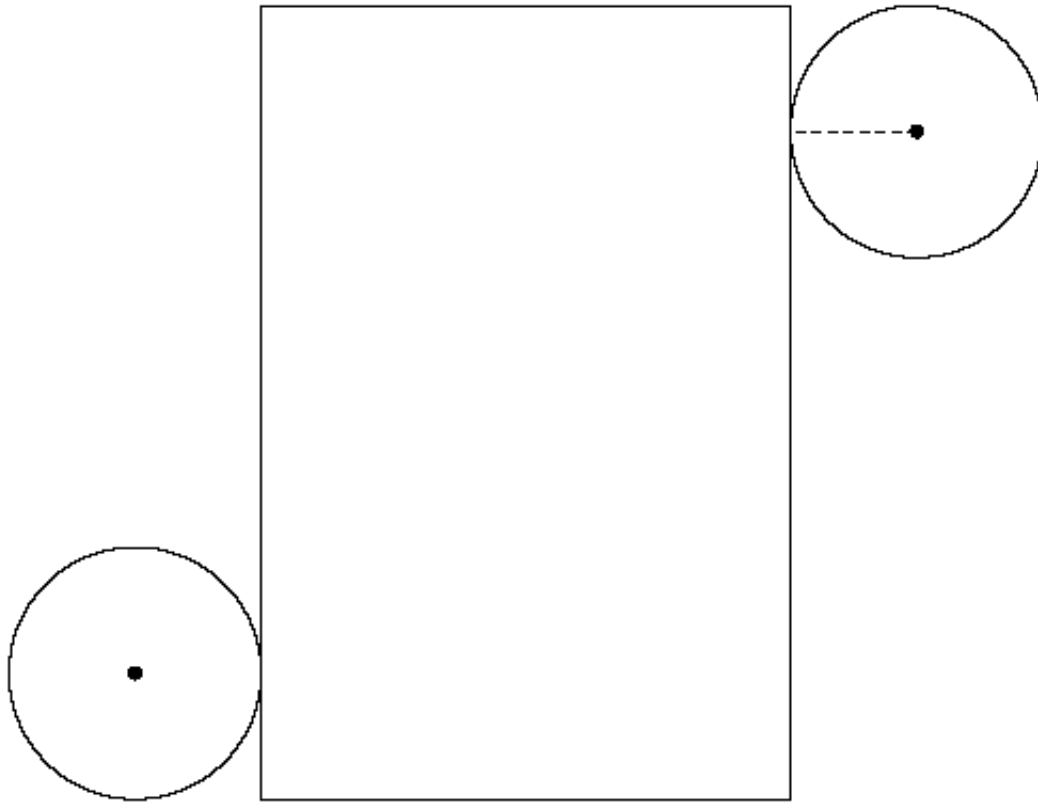
Find the total surface area of this cylinder to the nearest square centimeter.

- F** 6 cm^2
- G** 14 cm^2
- H** 19 cm^2
- J** 33 cm^2

8.8A 10th Grade 2003

**High School Math TEKS Focus
Objective Eight**

- 38 The net of a cylinder is shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the cylinder to the nearest tenth of a centimeter.



Which of the following best represents the total surface area of this cylinder?

F 142 cm^2

G 93 cm^2

H 23 cm^2

J 14 cm^2

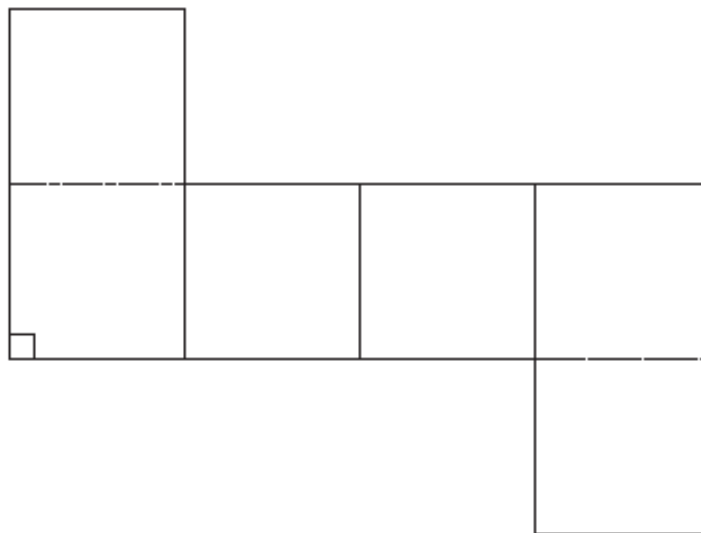
8.8A 10th Grade 2004

**HIGH SCHOOL Math TEKS Focus
Objective Eight**

8.8(B)

Connect models to formulas for volume of prisms, cylinders, pyramids, and cones

29 The net of a cube is shown below.



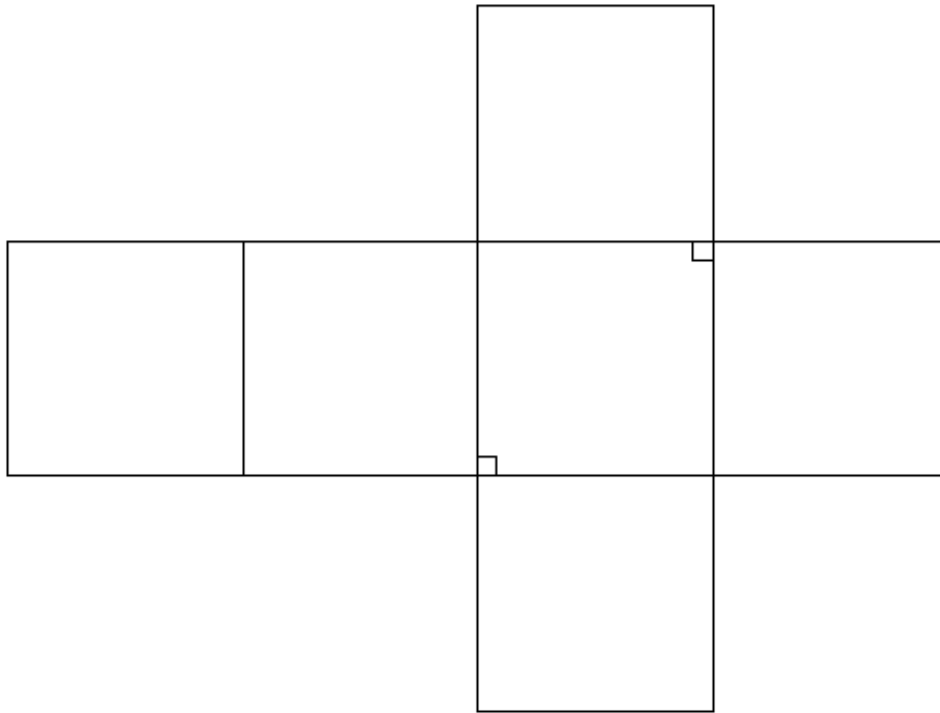
Use the ruler on the Mathematics Chart to measure the dimensions of the cube to the nearest tenth of a centimeter. Which best represents the volume of this cube to the nearest cubic centimeter?

- A 11 cm^3
- B 13 cm^3
- C 30 cm^3
- D 42 cm^3

8.8B 9th Grade 2003

**HIGH SCHOOL Math TEKS Focus
Objective Eight**

- 33 The net of a cube is shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the cube to the nearest quarter inch.



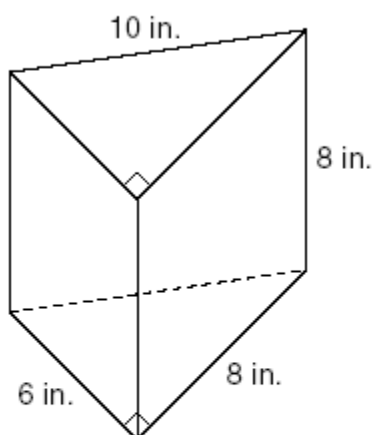
Which best represents the volume of this cube to the nearest cubic inch?

- A 2 in.³
- B 9 in.³
- C 12 in.³
- D 18 in.³

8.8B 10th Grade 2003

High School Math TEKS Focus Objective Eight

27 A triangular prism is shown below.

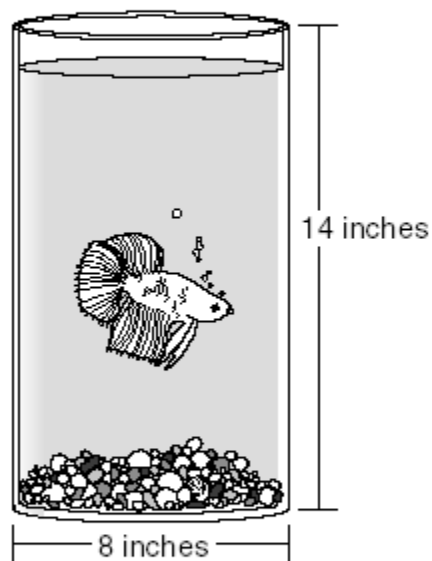


What is the volume of this triangular prism?

- A 192 in.³
- B 240 in.³
- C 384 in.³
- D 480 in.³

8.8B 10th Grade 2004

30 Steven has a cylindrical fish tank with a diameter of 8 inches and a height of 14 inches. He placed some rocks that took up 50 cubic inches at the bottom of the tank. Then he filled the tank with springwater to 2 inches from the top. Which is the best strategy for determining the volume of water the fish has for swimming?



- F $\pi(8)^2(14) - 50$
- G $\pi(8)^2(14 - 2) - 50$
- H $\pi(4)^2(14 - 2) - 50$
- J $\pi(14 - 2)^2(4) - 50$

8.8B 10th Grade 2004

HIGH SCHOOL Math TEKS FOCUS
Objective Eight

8.8(C)

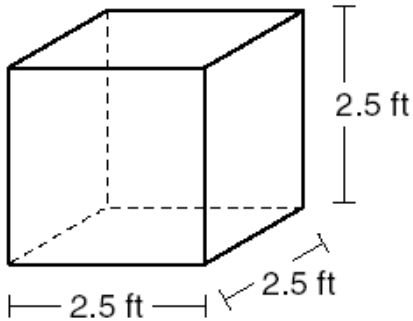
Estimate answers and use formulas to solve application problems involving surface area and volume

28 A cardboard box is 60 inches long, 18 inches wide, and 24 inches high. Which is closest to the volume of the box in cubic feet?

- F 8.5 ft^3
- G 15 ft^3
- H 18 ft^3
- J 24 ft^3

8.8C 8th Grade 2003

33 Jonathan shipped a birthday gift to his grandmother in a cubical box.

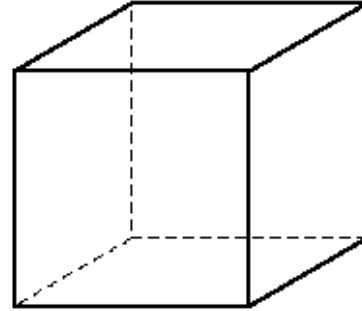


Which is closest to the surface area of the box?

- A 16 square feet
- B 15 square feet
- C 8 square feet
- D 38 square feet

8.8C 8th Grade 2004

37 A 72-inch piece of wire was cut into equal segments, which were then soldered at the ends to form the edges of a cube.



What is the volume of the cube?

- A 216 in.^3
- B 576 in.^3
- C 729 in.^3
- D 1728 in.^3

8.8C 9th Grade 2003

22 A cylindrical water tank has a radius of 2.8 feet and a height of 5.6 feet. The water tank is filled to the top. If water can be pumped out at a rate of 36 cubic feet per minute, about how long will it take to empty the water tank?

- F 3 h
- G 2 h
- H 4 min
- J 1 min

8.8C 9th Grade 2004

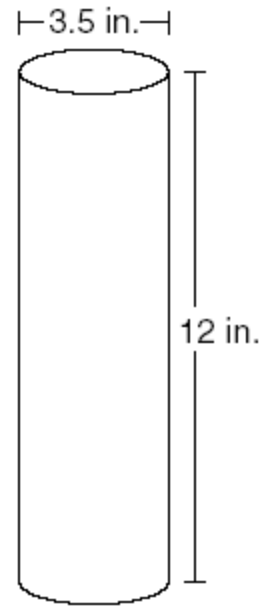
HIGH SCHOOL Math TEKS FOCUS Objective Eight

- 30 Ginny made a cylindrical clay vase for her art project. If the vase has a volume of 339 cubic inches and a diameter of 6 inches, which is closest to the height of the vase?

F 36 in.
G 18 in.
H 12 in.
J 3 in.

8.8C 10th Grade 2003

- 13 The owners of Neatly Packaged Company make a cylindrical container that has the dimensions shown below.



What is the approximate lateral surface area available for the package label?

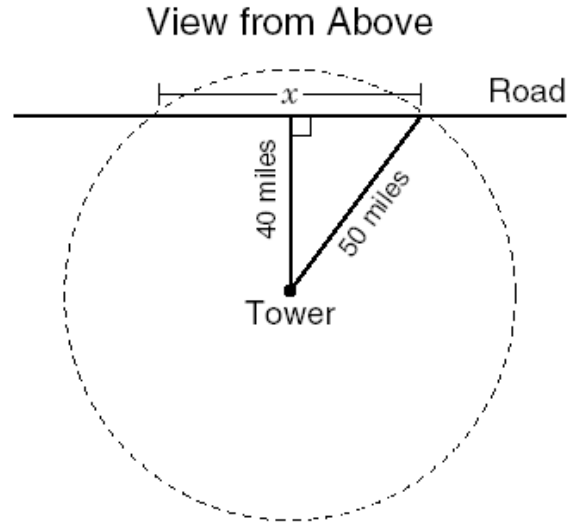
A 131.95 in.²
B 151.19 in.²
C 263.89 in.²
D 115.45 in.²

8.8C 10th Grade 2004

8.9(A)

Use the Pythagorean Theorem to solve real-life problems

- 19 A cell-phone tower that has a transmission range of 50 miles is located 40 miles due south of a straight road.



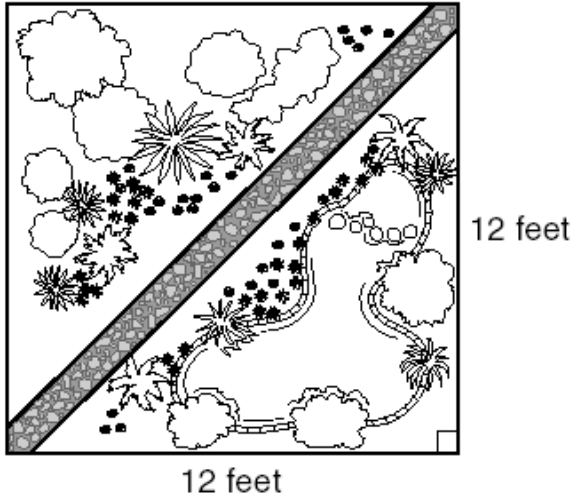
Find x , the length of the section of road that is within the transmission range of the tower.

A 10 mi
B 30 mi
C 60 mi
D 90 mi

8.9A 8th Grade 2003

HIGH SCHOOL Math TEKS FOCUS Objective Eight

- 17 Mr. Elliott designed a flower garden in the shape of a square. He plans to build a walkway through the garden, as shown below.

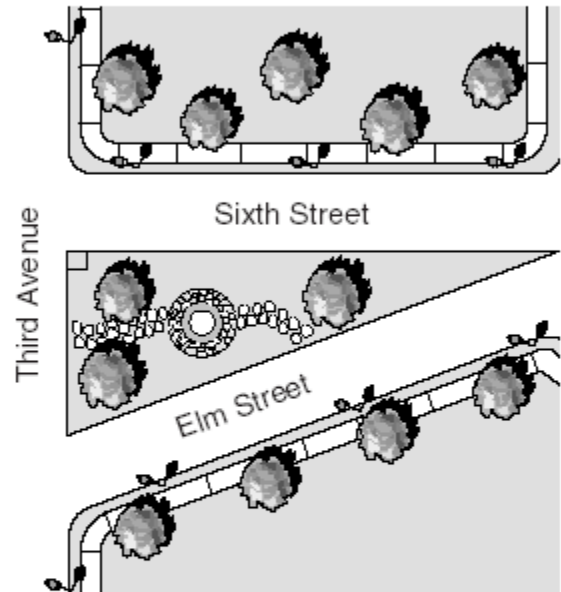


Which is closest to the length of the walkway?

- A 36 ft
- B 24 ft
- C 17 ft
- D 13 ft

8.9A 8th Grade 2004

- 38 In a town, there is a small garden shaped like a triangle, as shown below. The side of the garden that faces Sixth Street is 80 feet in length. The side of the garden that faces Third Avenue is 30 feet in length.



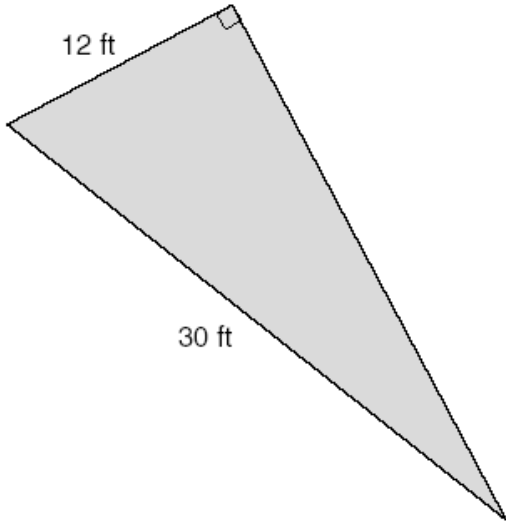
What is the approximate length of the side of the garden that faces Elm Street?

- F 35 ft
- G 40 ft
- H 85 ft
- J 110 ft

8.9A 9th Grade 2003

HIGH SCHOOL Math TEKS FOCUS Objective Eight

- 15 Mrs. Cheung hired a landscaping service to plant a row of bushes around her triangular backyard.



If the bushes must be planted 3 feet apart, approximately how many bushes are needed for Mrs. Cheung's backyard?

- A 23
- B 25
- C 28
- D 32

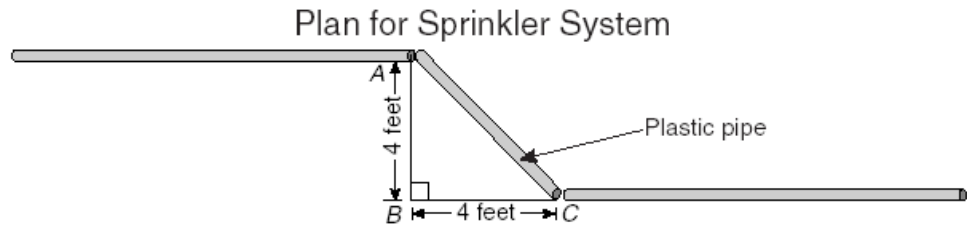
8.9A 10th Grade 2004

- 26 A square park has a diagonal walkway from 1 corner to another. If the walkway is about 38 yards long, what is the approximate length of each side of the park?

- F 6 yd
- G 19 yd
- H 27 yd
- J 54 yd

8.9A 9th Grade 2004

- 11 The drawing shows part of the plan for a new underground lawn-sprinkler system.



Which is closest to the length of the section of plastic pipe from point A to point C?

- A 4.7 ft
- B 5.7 ft
- C 6.7 ft
- D 7.7 ft

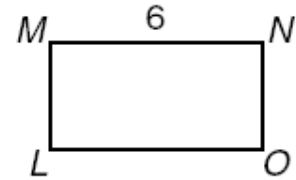
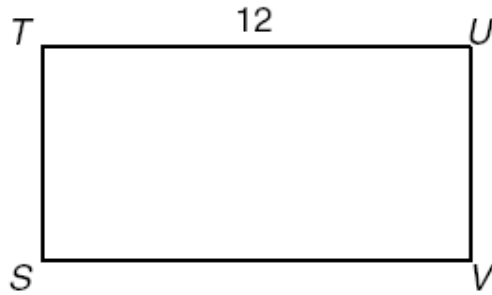
8.9A 10th Grade 2003

HIGH SCHOOL Math TEKS FOCUS
Objective Eight

8.10(A)

Describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionately

28 Rectangle $STUV$ is similar to rectangle $LMNO$.



If the area of rectangle $STUV$ is 72 square units, what is the area of rectangle $LMNO$?

- F 36 units²
- G 24 units²
- H 18 units²
- J 12 units²

8.10A 8th Grade 2004

16 Describe the effect on the area of a circle when the radius is doubled.

- F The area is reduced by $\frac{1}{2}$.
- G The area remains constant.
- H The area is doubled.
- J The area is increased four times.

8.10A 9th Grade 2003

29 Tony and Edwin each built a rectangular garden. Tony's garden is twice as long and twice as wide as Edwin's garden. If the area of Edwin's garden is 600 square feet, what is the area of Tony's garden?

- A 1200 ft²
- B 2400 ft²
- C 3600 ft²
- D 4800 ft²

8.10A 9th Grade 2004

HIGH SCHOOL Math TEKS FOCUS
Objective Eight

- 37 The scale factor of two similar polygons is 2:3. The perimeter of the larger polygon is 150 centimeters. What is the perimeter of the smaller polygon?

A 100 cm
B 75 cm
C 50 cm
D 150 cm

8.10A 9th Grade 2004

- 55 The scale of two similar quadrilaterals is 1:2. The perimeter of the smaller quadrilateral is 80 centimeters. What is the perimeter of the larger quadrilateral?

A 40 cm
B 80 cm
C 160 cm
D 320 cm

8.10A 10th Grade 2003

- 21 If the dimensions of a rectangle with a perimeter of 24 inches are tripled, what will be the perimeter in inches of the new rectangle?

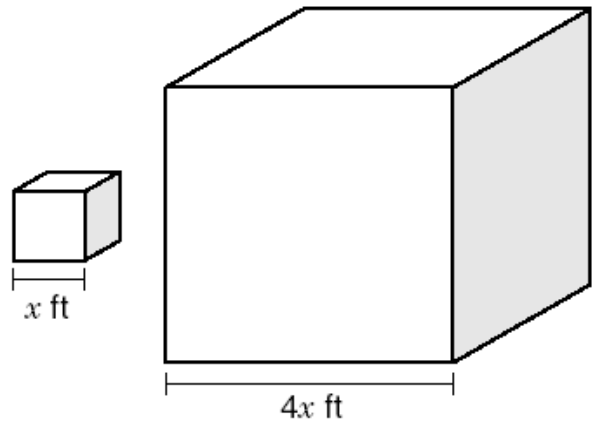
Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

8.10A 10th Grade 2004

8.10(B)

Describe the resulting effect on volume when the dimensions of a solid are changed proportionately

- 38 The dimensions of two cubes are shown below.



The volume of the smaller cube is 64 cubic feet. Find the volume of the larger cube.

F 16,384 ft^3
G 4,096 ft^3
H 768 ft^3
J 256 ft^3

8.10B 8th Grade 2003

- 28 The edges of a large cube are 4 times longer than the edges of a small cube. How many times greater is the volume of the large cube?

F 4 times
G 12 times
H 16 times
J 64 times

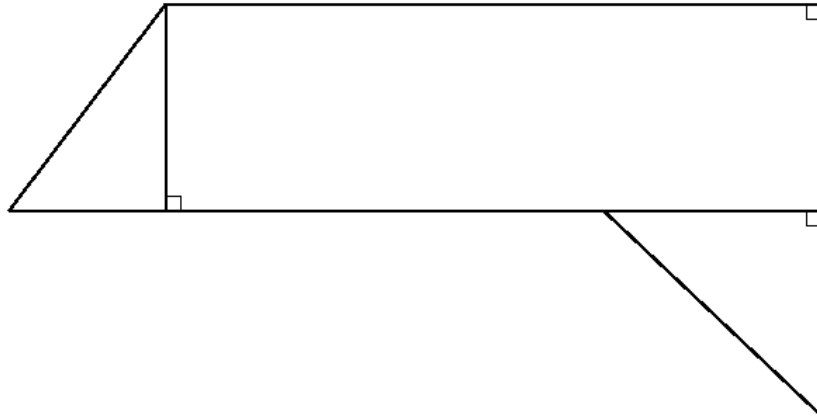
8.10A 10th Grade 2003

High School Math TEKS Focus Objective Eight

Geometry (e1A)

Find areas of regular polygons and composite figures

- 9 Use the ruler on the Mathematics Chart to measure the dimensions of the composite figure to the nearest tenth of a centimeter.

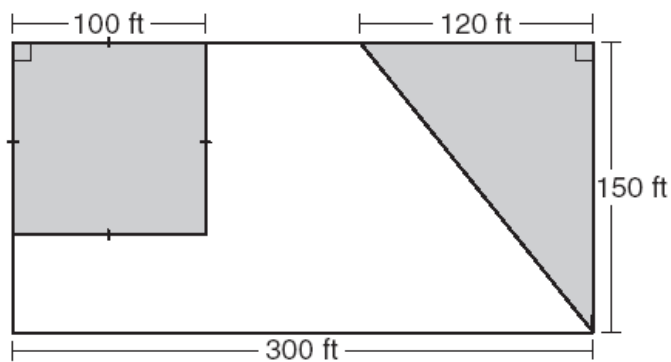


Which best represents the approximate area of this composite figure?

- A 34.7 cm²
- B 38.8 cm²
- C 44.6 cm²
- D 54.5 cm²

11th Grade 2003

- 43 What is the area of the unshaded part of the rectangle below?



- A 19,000 ft²
- B 45,000 ft²
- C 28,000 ft²
- D 26,000 ft²

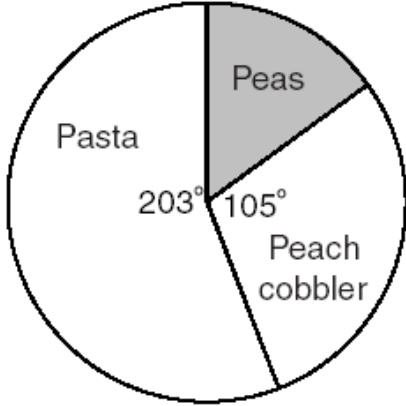
11th Grade 2004

HIGH SCHOOL Math TEKS FOCUS Objective Eight

Geometry (e1B)

Find areas of sectors and arc lengths of circles using proportional reasoning

- 52 A frozen dinner is divided into 3 sections on a circular plate with a 12-inch diameter.



What is the approximate length of the arc of the section containing peas?

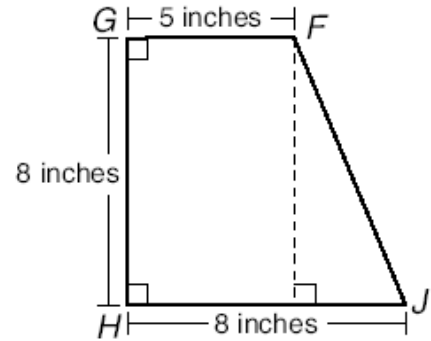
- F 3 in.
- G 21 in.
- H 16 in.
- J 5 in.

11th Grade 2004

Geometry (e1C)

Develop, extend, and use the Pythagorean Theorem

- 41 The total area of trapezoid $FGHJ$ is 52 square inches.



What is the approximate length of \overline{FJ} ?

- A 8.0 in.
- B 8.5 in.
- C 11.0 in.
- D 11.5 in.

11th Grade 2003

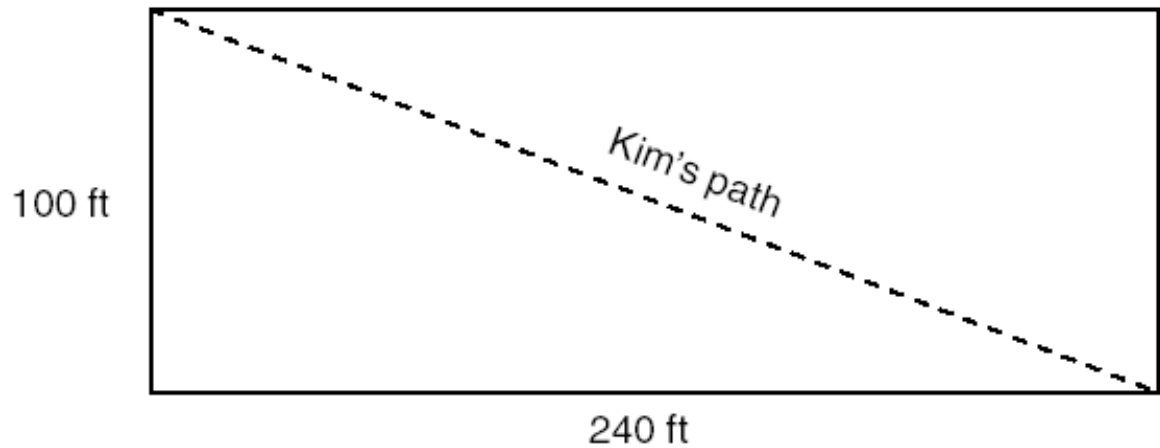
- 51 About how many feet of fencing are needed to enclose a rectangular garden with a 30-foot-long side and a 40-foot-long diagonal?

- A 113 ft
- B 133 ft
- C 140 ft
- D 160 ft

11th Grade 2004

HIGH SCHOOL Math TEKS FOCUS
Objective Eight

25 Kim walked diagonally across a rectangular field that measured 100 feet by 240 feet.



Which expression could be used to determine how far Kim walked?

- A $2(100 + 240)$
- B $\sqrt{100} + \sqrt{240}$
- C $\frac{100 \times 240}{2}$
- D $\sqrt{(100^2) + (240^2)}$

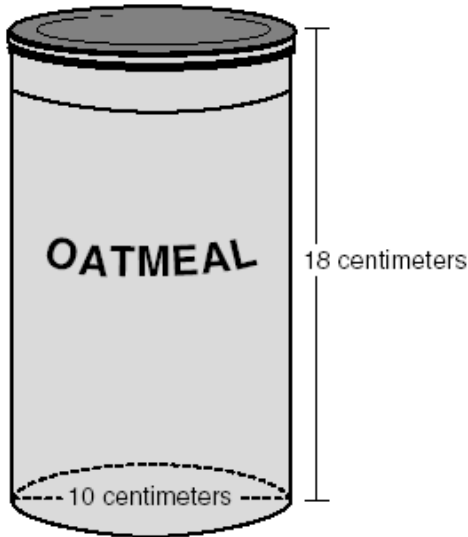
11th Grade 2004

High School Math TEKS Focus
Objective Eight

Geometry (e1D)

Find surface areas and volumes of prisms, pyramids, spheres, cones, and cylinders in problem situations

- 42 Oatmeal is packaged in a cylindrical container with the dimensions shown in the drawing.



Find the approximate volume of this oatmeal container.

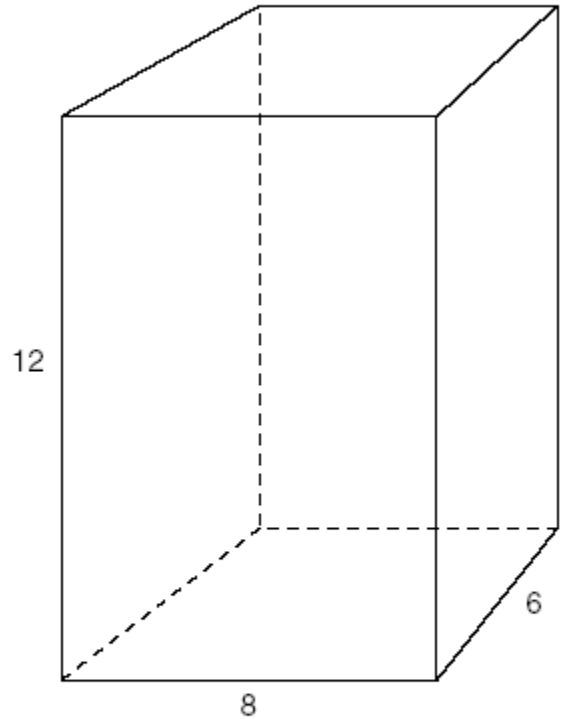
- F 471 cm^3
- G 566 cm^3
- H 1413 cm^3
- J 5655 cm^3

11th Grade 2003

Geometry (f1A)

Use similarity properties and transformations to explore and justify conjectures about geometric figures

- 6 Which set of dimensions corresponds to a rectangular prism similar to the one shown below?

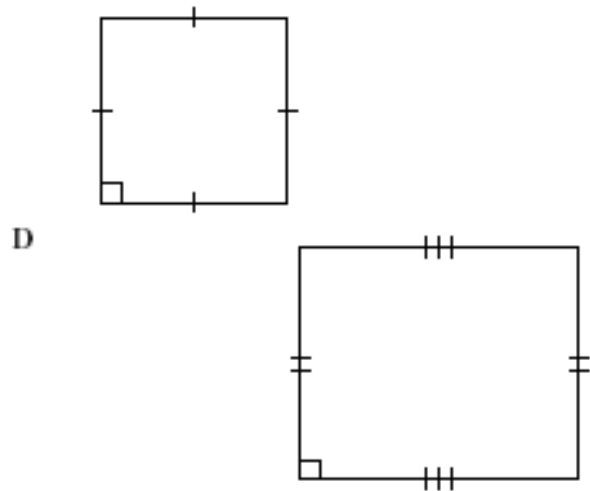
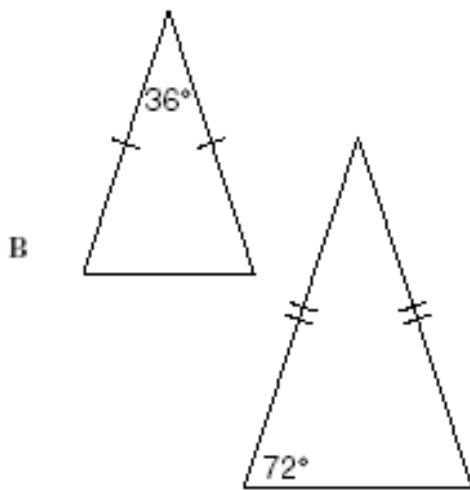
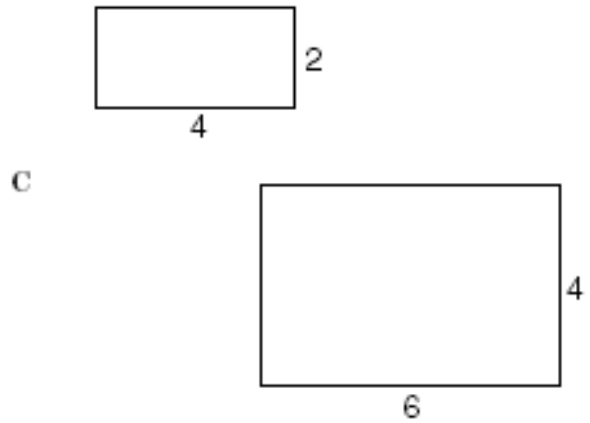
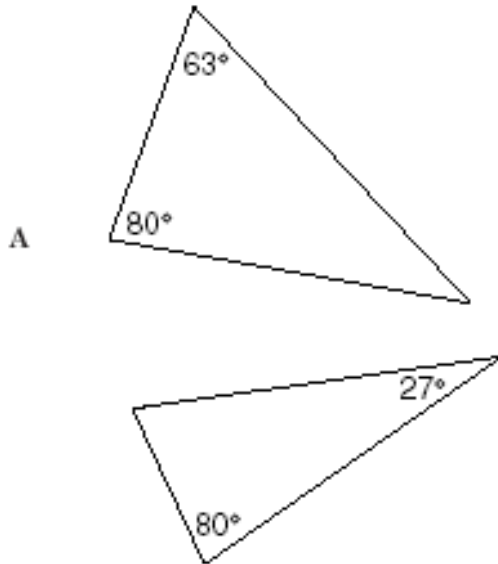


- F 2 units by 3 units by 4 units
- G 4 units by 2 units by 8 units
- H 2 units by 1 unit by 6 units
- J 4 units by 3 units by 6 units

11th Grade 2004

HIGH SCHOOL Math TEKS Focus Objective Eight

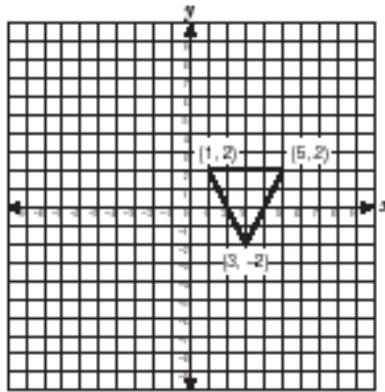
13 Use the information in each diagram to find the pair of similar polygons.



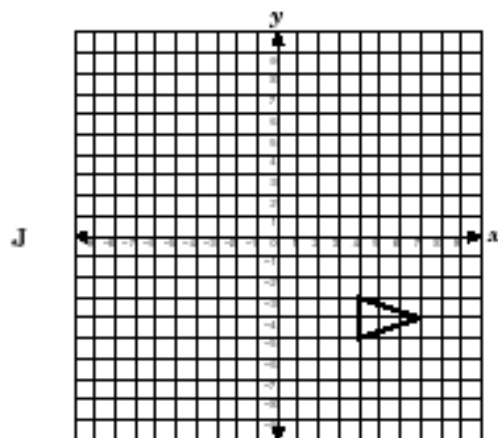
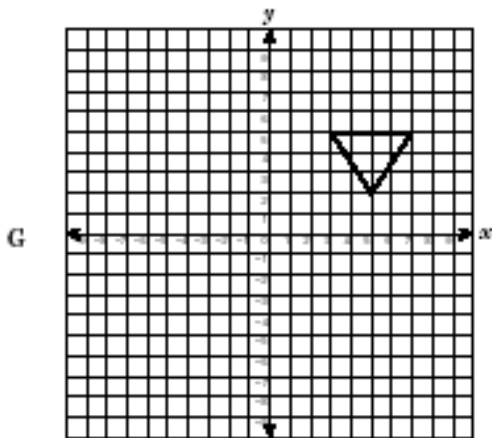
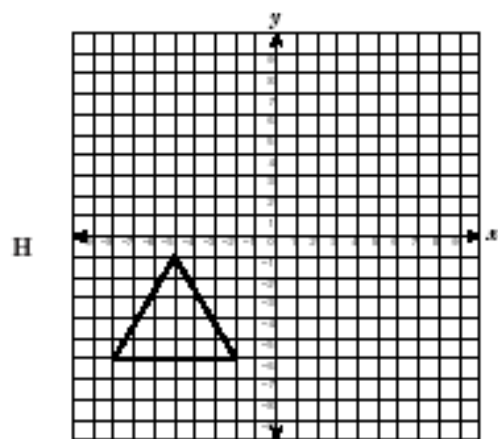
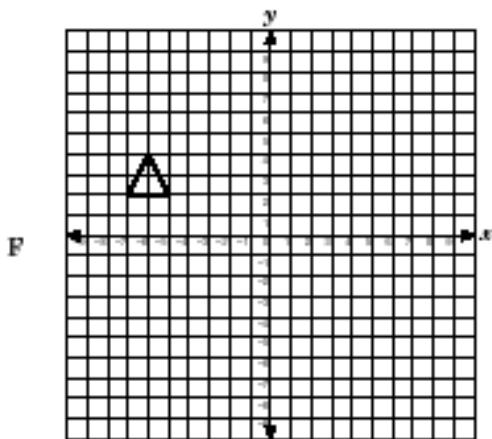
11th Grade 2003

HIGH SCHOOL Math TEKS FOCUS Objective Eight

32 A triangle with vertices $(1, 2)$, $(5, 2)$, and $(3, -2)$ is shown below.



Which triangle below is similar to the figure above?



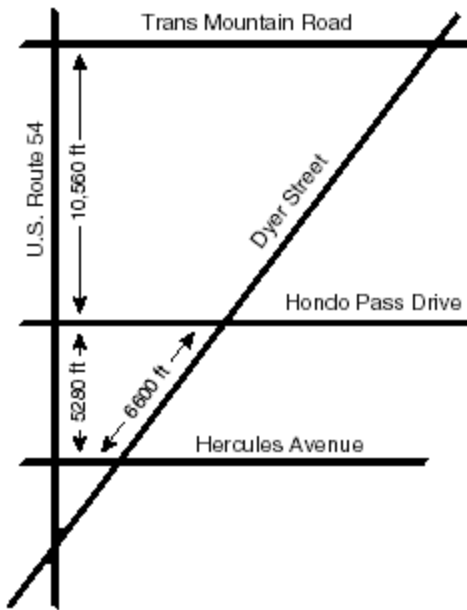
11th Grade 2003

High School Math TEKS Focus Objective Eight

Geometry (1B)

Use ratios to solve problems involving similar figures

- 39 In El Paso, Texas, the streets named Hercules Avenue, Hondo Pass Drive, and Trans Mountain Road are parallel. They all intersect Dyer Street and U.S. Route 54, as shown on the map below.



If all of these streets are straight line segments, how long is Dyer Street between Hercules Avenue and Trans Mountain Road?

- A 8,450 ft
- B 9,900 ft
- C 13,200 ft
- D 19,800 ft

11th Grade 2003

- 23 A rectangle has a length of 4 feet and a perimeter of 14 feet. What is the perimeter of a similar rectangle with a width of 9 feet?

- A 36 ft
- B 42 ft
- C 108 ft
- D 126 ft

11th Grade 2004

Geometry (1C)

(In a variety of ways) develop, apply, and justify triangle similarity relationships, such as right triangle ratios, trigonometric ratios, and Pythagorean triples

No Test Items Available

HIGH SCHOOL Math TEKS Focus
Objective Eight

Geometry (1D)

Describe the effect on perimeter, area, and volume when length, width, or height of a three-dimensional solid is changed and applies this idea in solving problems

33 A rectangular solid has a volume of 24 cubic decimeters. If the length, width, and height are all changed to $\frac{1}{2}$ their original size, what will be the new volume of the rectangular solid?

- A** 3 dm³
- B** 4 dm³
- C** 6 dm³
- D** 12 dm³

11th Grade 2003

26 If the surface area of a cube is increased by a factor of 4, what is the change in the length of the sides of the cube?

- F** The length is 2 times the original length.
- G** The length is 4 times the original length.
- H** The length is 6 times the original length.
- J** The length is 8 times the original length.

11th Grade 2004