

Score: 10 of 10 pts

1 of 15 ▼

Test Score: 96.67%, 145 of 150 pts

✓ 6.1.5

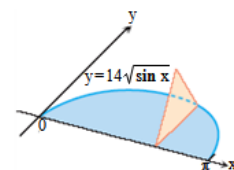
Question Help



Find the volume of the following solids.

The base of a solid is the region between the curve $y = 14\sqrt{\sin x}$ and the interval $[0, \pi]$ on the x-axis. The cross-sections perpendicular to the x-axis are

- equilateral triangles with bases running from the x-axis to the curve as shown in the figure.
- squares with bases running from the x-axis to the curve.



a. $V = 98\sqrt{3}$ (Type an exact answer, using radicals as needed.)

b. $V = 392$ (Type an exact answer, using radicals as needed.)

Score: 10 of 10 pts

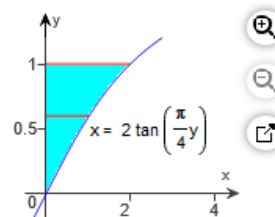
2 of 15 ▼

Test Score: 96.67%

✓ 6.1.17

Question Help

Find the volume of the solid generated by revolving the shaded region about the y-axis.



The volume of the solid generated by revolving the shaded region about the y-axis is $16 - 4\pi$.
(Type an exact answer, using π as needed.)

Score: 10 of 10 pts

3 of 15 ▼

Test Score: 96.67%, 14

✓ 6.1.19

Question Help

Find the volume of the solid generated by revolving the region bounded by $y = 2x^2$, $y = 0$, and $x = 4$ about the x-axis.

The volume of the solid generated by revolving the region bounded by $y = 2x^2$, $y = 0$, and $x = 4$ about the x-axis is $\frac{4096\pi}{5}$ cubic units.
(Type an exact answer, using π as needed.)

Score: 10 of 10 pts

4 of 15 ▼

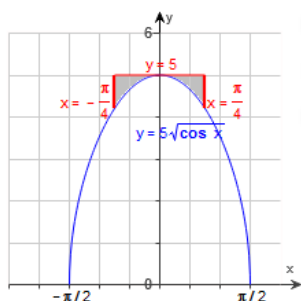
Test Score: 96.67%, 145 of 150 pts

✓ 6.1.33

Question Help



Use the washer method to find the volume of the solid generated by revolving the shaded region about the x-axis.



The volume of the solid generated by revolving the shaded region about the x-axis is 12.30 cubic units.
(Round to the nearest hundredth as needed.)

Score: 10 of 10 pts

5 of 15 ▼

Test Score

✓ 6.1.35

Find the volume of the solid generated by revolving the region bounded by the given curve and lines about the x-axis.

$$y = 5x, \quad y = 5, \quad x = 0$$

$$V = \frac{50\pi}{3}$$

(Type an exact answer, using π as needed.)

Score: 10 of 10 pts

6 of 15 ▼

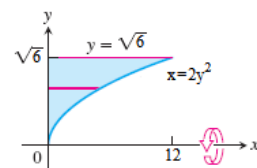
Test Score: 96.67%, 145 of 150 pts

✓ 6.2.3

Question Help



Use the shell method to find the volume of the solid generated by revolving the shaded region about the x-axis.



The volume is 36π .

(Type an exact answer, using π as needed.)

Score: 10 of 10 pts

7 of 15 ▼

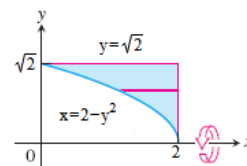
Test Score: 96.67%, 145 of 150 pts

✓ 6.2.4

Question Help



Use the shell method to find the volume of the solid generated by revolving the shaded region about the x-axis.



The volume is 2π .

(Type an exact answer in terms of π .)

Score: 10 of 10 pts

8 of 15 ▼

Test Score: 96.67%, 145 of 150 pts

✓ 6.5.1



It takes 2000 J of work to stretch a spring from its natural length of 1 m to a length of 4 m. Find the force constant of the spring.

The spring's force constant is $\frac{4000}{9}$ N/m.

(Type an integer or a simplified fraction.)

Score: 5 of 10 pts

9 of 15 ▼

Test Score: 96.67%, 145 of 150 pts

✗ 6.5.3

Question Help



A force of 6 N will stretch a rubber band 12 cm (0.12 m). Assuming that Hooke's law applies, how far will a 1-N force stretch the rubber band? How much work does it take to stretch the rubber band this far?

How far will a 1-N force stretch the rubber band?

.02 m

(Simplify your answer.)

How much work does it take to stretch the rubber band this far?

0.01 J

(Simplify your answer.)

You answered: .5

[Get answer feedback](#)

Score: 10 of 10 pts

10 of 15 ▼

Test Score: 96.67%,

✓ 6.5.7

☰ Question Help

A mountain climber is about to haul up a 50-m length of hanging rope. How much work will it take if the rope weighs 0.75 N/m?

The amount of work required is **937.5** J.
(Type an integer or a decimal.)

Score: 10 of 10 pts

11 of 15 ▼

Test Score: 96.67%, 145 of 150 pts

✓ 6.5.9

☰ Question Help



An electric elevator with a motor at the top has a multistrand cable weighing 7 lb/ft. When the car is at the first floor, 130 ft of cable are paid out, and effectively 0 ft are out when the car is at the top floor. How much work does the motor do just lifting the cable when it takes the car from the first floor to the top?

The amount of work required is **59150** ft-lb.
(Simplify your answer.)

Score: 10 of 10 pts

12 of 15 ▼

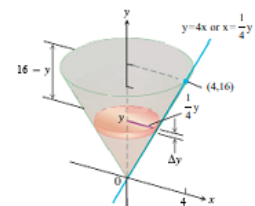
Test Score: 96.67%, 145 of 150 pts

✓ 6.5.15

☰ Question Help



The conical tank shown here is filled with olive oil weighing 57 lb/ft³. How much work does it take to pump all of the oil to the rim of the tank?



$W =$ **61123** ft-lb (Round to the nearest whole number as needed.)

Score: 10 of 10 pts

13 of 15 ▼

✓ 6.5.26

Find the work required to project a 5 oz object initially at rest to 170 ft/sec.

The work required to project a 5 oz object initially at rest to 170 ft/sec is **141.1** ft-lb.
(Do not round until the final answer. Then round to the nearest tenth as needed.)

Score: 10 of 10 pts



14 of 15 ▼



Test Score: 96.67%, 145 of 150 pts



6.5.39

Question Help



The viewing portion of the rectangular glass window in a fish tank is 45 inches wide and runs from 1.5 inches below the water's surface to 40.5 inches below the surface. Find the fluid force against this portion of the window. The weight-density of seawater is 64 lb/ft^3 .

What is the fluid force against the window?

1365 lb

Score: 10 of 10 pts



15 of 15 ▼



Test Score: 96.67%, 1



6.6.1

Question Help

Find the center of mass of a thin plate of constant density δ covering the region bounded by the parabola $y = 3x^2$ and the line $y = 12$.

The center of mass is located at $(\bar{x}, \bar{y}) = (0, 7.2)$.

(Simplify your answer. Type an ordered pair.)