Related Rates with Derivatives · 1

A 25 ft ladder leans against a wall. Its bottom slides away from the wall at 2 ft/s. Find dy/dt, the rate the height y of the top is changing, when the bottom is 7 ft from the wall.

Related Rates with Derivatives · 2

Two cars leave the same corner at the same time: one drives east at 55 mph, the other north at 50 mph. How fast is the distance between them changing when the first car is 24 miles east and the second is 32 miles north?

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Water pours at 24π cm³/s into a cone-shaped tank, point down, whose height is twice its top radius. How fast is the water level rising when the water is 4 cm deep?

Related Rates with Derivatives · 4

Air is pumped into a spherical balloon at 48π m³/min. How fast is the radius growing when the radius is 2 m?

Related Rates with Derivatives · 5

A 10 ft ladder leans against a wall. Its top slides down the wall at 3 ft/s. How fast is the bottom moving away from the wall when the top is 6 ft above the ground?

Related Rates with Derivatives · 6

The area of a circle grows at 10π ft²/min. How fast is the radius growing when the radius is 4 ft?

Related Rates with Derivatives · 7

A 20 ft ladder leans against a wall. Its bottom slides away from the wall at 1 ft/s. Find dy/dt, the rate the height y of the top is changing, when the bottom is 12 ft from the wall.

Related Rates with Derivatives · 8

A 10 ft ladder leans against a wall. Its top slides down the wall at 3 ft/s. How fast is the bottom moving away from the wall when the top is 8 ft above the ground?

Related Rates with Derivatives · 2

ANSWER

$$73$$

Related Rates with Derivatives · 1

ANSWER

$$\frac{7}{-12}$$

Related Rates with Derivatives · 4

ANSWER

$$3$$

Related Rates with Derivatives · 3

ANSWER

$$6$$

Related Rates with Derivatives · 6

ANSWER

$$\frac{5}{4}$$

Related Rates with Derivatives · 5

ANSWER

$$\frac{9}{4}$$

Related Rates with Derivatives · 8

ANSWER

$$4$$

Related Rates with Derivatives · 7

ANSWER

$$\frac{3}{-4}$$

Related Rates with Derivatives · 9

Two cars leave the same corner at the same time: one drives east at 55 mph, the other north at 30 mph. How fast is the distance between them changing when the first car is 30 miles east and the second is 40 miles north?

Related Rates with Derivatives · 10

Water pours at 4π m³/min into a cone-shaped tank, point down, whose height is twice its top radius. How fast is the water level rising when the water is 2 m deep?

Related Rates with Derivatives · 11

Air is pumped into a spherical balloon at 16π cm³/s. How fast is the radius growing when the radius is 2 cm?

Related Rates with Derivatives · 12

A 25 ft ladder leans against a wall. Its top slides down the wall at 4 ft/s. How fast is the bottom moving away from the wall when the top is 15 ft above the ground?

Related Rates with Derivatives · 13

The area of a circle grows at 14π ft²/min. How fast is the radius growing when the radius is 5 ft?

Related Rates with Derivatives · 14

A 25 ft ladder leans against a wall. Its top slides down the wall at 1 ft/s. How fast is the bottom moving away from the wall when the top is 7 ft above the ground?

Related Rates with Derivatives · 15

Water pours at 4π m³/min into a cone-shaped tank, point down, whose height is twice its top radius. How fast is the water level rising when the water is 8 m deep?

Related Rates with Derivatives · 16

A 10 ft ladder leans against a wall. Its bottom slides away from the wall at 1 ft/s. Find dy/dt, the rate the height y of the top is changing, when the bottom is 8 ft from the wall.

Related Rates with Derivatives · 10

ANSWER

4

Related Rates with Derivatives · 9

ANSWER

57

Related Rates with Derivatives · 12

ANSWER

3

Related Rates with Derivatives · 11

ANSWER

1

Related Rates with Derivatives · 14

ANSWER

$$\frac{7}{24}$$

Related Rates with Derivatives · 13

ANSWER

$$\frac{7}{5}$$

Related Rates with Derivatives · 16

ANSWER

$$\frac{4}{-3}$$

Related Rates with Derivatives · 15

ANSWER

$$\frac{1}{4}$$

Related Rates with Derivatives · 17

Two cars leave the same corner at the same time: one drives east at 50 mph, the other north at 30 mph. How fast is the distance between them changing when the first car is 15 miles east and the second is 20 miles north?

Related Rates with Derivatives · 18

Water pours at 16π cm^3/s into a cone-shaped tank, point down, whose height is twice its top radius. How fast is the water level rising when the water is 8 cm deep?

Related Rates with Derivatives · 19

Air is pumped into a spherical balloon at 40π m^3/min. How fast is the radius growing when the radius is 6 m?

Related Rates with Derivatives · 20

A 13 ft ladder leans against a wall. Its top slides down the wall at 1 ft/s. How fast is the bottom moving away from the wall when the top is 5 ft above the ground?

Related Rates with Derivatives · 21

The area of a circle grows at 18π in^2/s. How fast is the radius growing when the radius is 6 in?

Related Rates with Derivatives · 22

Water pours at 4π cm^3/s into a cone-shaped tank, point down, whose height is twice its top radius. How fast is the water level rising when the water is 8 cm deep?

Related Rates with Derivatives · 23

Water pours at 1π m^3/min into a cone-shaped tank, point down, whose height is twice its top radius. How fast is the water level rising when the water is 8 m deep?

Related Rates with Derivatives · 24

Two cars leave the same corner at the same time: one drives east at 20 mph, the other north at 60 mph. How fast is the distance between them changing when the first car is 60 miles east and the second is 80 miles north?

Related Rates with Derivatives · 18

ANSWER

$$1$$

Related Rates with Derivatives · 17

ANSWER

$$54$$

Related Rates with Derivatives · 20

ANSWER

$$\frac{5}{12}$$

Related Rates with Derivatives · 19

ANSWER

$$\frac{5}{18}$$

Related Rates with Derivatives · 22

ANSWER

$$\frac{1}{4}$$

Related Rates with Derivatives · 21

ANSWER

$$\frac{3}{2}$$

Related Rates with Derivatives · 24

ANSWER

$$60$$

Related Rates with Derivatives · 23

ANSWER

$$\frac{1}{16}$$