

Determine whether each equation represents DIRECT or INVERSE variation.

Answer
Homework
(this side only)

5) $y = \frac{6}{x}$ I

6) $y = \frac{10}{x}$ I

7) $y = 6x^2$ D

8) $y = 3x^3$ D

9) $y = 25x$ D

10) $y = -7x$ D

11) $y = \frac{5}{x^2}$ I

12) $y = \frac{9}{x^3}$ I

Solve each problem involving direct or inverse variation.

13) If x varies directly as y, and $x = 27$ when $y = 6$, find x when $y = 2$.

9

14) If y varies inversely as x, and $y = 23$ when $x = 8$, find y when $x = 4$.

46

15) If z varies directly as x, and $z = 30$ when $x = 8$, find z when $x = 4$.

15

16) If y varies inversely as x, and $y = 14$ when $x = 8$, find y when $x = 7$.

16

17) If d varies directly as t, and $d = 150$ when $t = 3$, find d when $t = 5$.

250

18) If y varies directly as x, and $y = 6$ when $x = 10$, find x when $y = 18$.

30

19) If x varies inversely as y, and $x = 3$ when $y = 8$, find y when $x = 4$.

6

20) If z varies inversely as x^2 , and $z = 9$ when $x = \frac{2}{3}$, find z when $x = \frac{5}{4}$.

$\frac{64}{25}$

21) If y varies directly as x, and $y = -4$ when $x = 32$, find y when $x = 3$.

$-\frac{3}{8}$

22) If p varies inversely as q^2 , and $p = 4$ when $q = \frac{1}{2}$, find p when $q = \frac{3}{2}$.

$\frac{4}{9}$

Solve each problem.

23) The number of pencils sold varies directly as the cost. If 5 pencils cost \$0.45, find the cost of 7 pencils.

\$0.63

24) On a scale drawing, 2 feet represents 30 yards. How many yards are represented by 3 feet?

45 yards

inches. How many miles are represented by 6 inches?

mass. A beam is bent 20mm by a mass of 40 kg. How much will the beam bend with a mass of 100 kg?

- 27) Y varies directly as the square of x. If y is 25 when x is 3, find y when x is 2.

$$11 \frac{1}{9}$$

- 28) The distance needed to stop a car varies directly as the square of its speed. It requires 120 m to stop a car at 70 km/h. What distance is required to stop a car at 80 km/h?

$$156.73 \text{ m}$$

- 29) Laura has a mass of 60 kg and is sitting 265 cm from the fulcrum of a seesaw. Bill has a mass of 50 kg. How far from the fulcrum must he be to balance the seesaw? (Hint: The distance from the fulcrum varies inversely as the mass).

$$318 \text{ cm}$$

- 30) Tina's mass is 40 kg, and she is sitting 2 m from the fulcrum of a seesaw. Jasmine's mass is 20 kg. How far from the fulcrum must she sit to balance the seesaw?

$$4 \text{ m}$$

- 31) Time varies inversely as speed if the distance is constant. A trip takes 4 hours at 80 km/h. How long does it take at 64 km/h?

$$5 \text{ hrs.}$$

- 32) In an electric circuit, the current varies inversely as the resistance. The current is 40 amps when the resistance is 12 ohms. Find the current when the resistance is 20 ohms.

$$24 \text{ amps}$$

- 33) The number of hours required to do a job varies inversely as the number of people working. It takes 8 hours for 4 people to paint the inside of a house. How long would it take 5 people to do the job?

$$6.4 \text{ hrs}$$

- 34) The length of the base of a triangle with constant area varies inversely as the height. When the base is 18 cm long, the height is 7 cm. Find the length of the base when the height is 6 cm.

$$21 \text{ cm}$$

Extra Practice