Direct and Inverse Variation

Overview of problems

Example Set: A

y varies directly as x. Find y given each pair of values

$y = 6$ when $x = -3$ find y when $x = 9$

$y = 4$ when $x = 10$ find y when $x = 7$

$y = 15$ when $x = -8$ find y when $x = -2$

$y = -2/3$ when $x = 1/4$ find y when $x = 2/5$

Example Set: B

y and x vary inversely. Find y given each pair of values

$y = 14$ when $x = 2$ find y when $x = 5$

$y = -9$ when $x = 10$ find y when $x = -3$

$y = 5$ when $x = 1$ find y when $x = 25$

$y = \frac{1}{3}$ when $x = \frac{2}{5}$ find y when $x = \frac{1}{6}$

Example Set: C

The number of students on a school's honor roll varies directly to the total number of students enrolled at the school. 32 students made the honor roll when the total student body was 540 how many students should be on the honor roll when the school population grows to 720?

An auto shop as determined that the total number of customer complaints varies inversely by the number of mechanics employed. Last month the shop of 10 employees received 15 complaints. How many complaints should the auto shop expect after increasing their total employees to 14?

Direct and Inverse Variation

Overview of problems- KEY

Example Set: A

y varies directly as x. Find y given each pair of values

$y = 6$ when $x = -3$ find y when $x = 9$

$y = -18$

$y = 4$ when $x = 10$ find y when $x = 7$

$y = 2.8$

$y = 15$ when $x = -8$ find y when $x = -2$

$y = 3.75$

$y = -\frac{2}{3}$ when $x = \frac{1}{4}$ find y when $x = \frac{2}{5}$

$y = -.96$

Example Set: B

y and x vary inversely. Find y given each pair of values

$y = 14$ when $x = 2$ find y when $x = 5$

$y = 5.6$

$y = -9$ when $x = 10$ find y when $x = -3$

$y = 30$

$y = 5$ when $x = 1$ find y when $x = 25$

$y = \frac{1}{5}$

$y = \frac{1}{3}$ when $x = \frac{2}{5}$ find y when $x = \frac{1}{6}$

$y = \frac{4}{5}$

Example Set: C

The number of students on a school's honor roll varies directly to the total number of students enrolled at the school. 32 students made the honor roll when the total student body was 540 how many students should be on the honor roll when the school population grows to 720?

42 honor roll students

An auto shop as determined that the total number of customer complaints varies inversely by the number of mechanics employed. Last month the shop of 10 employees received 15 complaints. How many complaints should the auto shop expect after increasing their total employees to 14?

11 complaints