Algebra 2/Trig H
Sec. 2.4 Direct Variation and Linear Functions

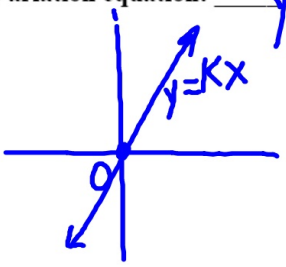
NOTES

Date Sept 14

Direct Variation equation: $y = Kx$, $K \neq 0$

K is the constant of variation

"x + y vary directly"



Ex. 1: x and y vary directly. The value of $y = 19.22$ when $x = 6.2$.

a) Write an equation relating x and y.

$y = Kx$

$19.22 = K(6.2)$

$3.1 = K$

$y = 3.1x$

b) Find y when $x = 4.3$.

$y = 3.1(4.3)$

$y = 13.33$

Ex. 2 Does the set of data below show a direct variation? Why or why not?

x	5	6	7
y	7.5	9	10.5

$K = 1.5$

Yes

$y = Kx$

$\frac{y}{x} = K$

$y = 1.5x$

Ex. 3: The price *(p)* in dollars of a 14-karat gold chain varies directly as its length *(L)* in inches. On QVC, a 16-inch chain costs $288.

a) Write an equation relating price and length.

$p = KL$

$288 = K(16)$

$18 = K$

$p = 18L$

b) Find the length of a chain that costs $540.

$540 = 18L$

$30 \text{ in} = L$

Ex. 4: From 1840 to 1850, the rate at which the percent of the labor force in nonfarming occupations increased was approximately linear. In 1840, 31.4% of the labor force held nonfarming jobs. In 1850, 36.3% of the labor force held nonfarming jobs.

Write a linear equation for the percent of the labor force *(p)* in nonfarming occupations, where *t* represent the number of years since 1840.

$y = mx + b$

$p = mt + b$

$p = .49t + 31.4$

(t, p)

$(0, 31.4)$

$(10, 36.3)$