

Finish this after the Chapter 6 Test. This sheet is due tomorrow.

**Direct Variation** Direct Variation is a when  $x$  and  $y$  have a constant ratio. $k = \frac{y}{x}$  this is called the variation constant.Two equations for Direct Variation are  $\frac{y}{x} = k$  and  $y = kx$ 

Is each table of values an example of Direct Variation?

If yes, do the following: a) write a variation equation

b) Find  $x$  when  $y = 25$ 

1.

X	Y
-15	-51
-2.5	-8.5
3.25	11.05
9	30.6
31.2	106.08

2.

X	Y
-6	-51
-1.25	-10.63
68.85	8.1
12.5	106.25
30	255

3. Given  $(8, 12)$  and  $(-20, y)$  are points from the same Direct Variation find the value of  $y$ .

4. The amount of water in a bath tub varies directly with the amount of time the water has been running. After 4 minutes there is 5 gallons of water in the tub.

a) State the variation constant including units.

b) Find the amount of time it takes to fill the tub with 24 gallons of water.

**Inverse Variation** Inverse Variation is when  $x$  and  $y$  have a constant product. $k = xy$  this is called the variation constant.Three equations for Inverse Variation are  $xy = k$ ,  $y = \frac{k}{x}$  and  $x = \frac{k}{y}$ 

Is each table of values an example of Inverse Variation?

If yes, do the following: a) write a variation equation

b) Find  $y$  when  $x = 40$ 

5.

X	Y
-12	-4.5
-8	-6.75
-2.5	21.6
7.5	7.2
24	2.25

6.

X	Y
-15	6.4
-4	24
6	-16
25	-3.84
32	-3

7. Given  $(25, 6)$  and  $(x, 21)$  are points from the same Inverse Variation find the value of  $x$ .

8. When you bought your car you got a 0% interest loan. The amount of your monthly payment varies inversely with the # of months of your loan. A 48 month loan would have \$425.25 monthly payments.

a) Write an Inverse Variation equation.

b) Find your monthly payment if your loan was for 36 months.