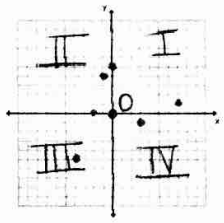
Ch 4 Test Review

1 Given the graph below label the quadrants, origin and tell whether x & y is positive or negative in each quadrant



I: (x, y)
II: (−x, y)
III: (−x, −y)
IV: (x, −y)

2 Plot the following points (−2,0) (7,1) (−1,4) (−4,−5) (0,5) (3,−1) on the graph above

3 Use the distributive property to simplify the following expressions

a $3(x+2)$ $3x+6$

b $-4(x-7)$ $-4x+28$

c $3x(x-5)$ $3x^2-15x$

d $2(3x^2+4x-5)$ $6x^2+8x-10$

4 Factor the following completely

a $4x-16$ $4(x-4)$

b $-15x-20$ $-5(3x+4)$

c $3x^2+7x$ $x(3x+7)$

d $12x^2y^3z^5-36x^2y^3z$ $12x^2y^3z(y^2z^4-3)$

5 Given that x & y vary inversely when $x=7$, $y=-3$. Find the constant of variation and find y when $x=10$

$k=7(-3)=-21$ $y=\frac{-21}{10}=\boxed{-2.1}$

6 Y varies directly with x When $x=2$, $y=18$. Find x when $y=25$

$k=\frac{18}{2}=9$ $y=9x$

$25=9x$

$\boxed{2.8=x}$

7 For the following charts decide whether the chart shows an inverse variation, direct variation or neither If it is a variation find the constant of variation and the equation

a

x	y
-2	-4
-1	-8
2	4
2.5	3.2
5	16

$x \cdot y$

Direct [Inverse] [Neither]

Constant 8

Equation $y=\frac{8}{x}$

b

x	y
-2	10
-1	5
2	10
4	20
5	21

Direct Inverse [Neither]

Constant _____

Equation

c

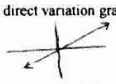
x	y
6.75	-9
3.75	-5
-2	1.5
-4	1
-8	6

Direct Inverse [Neither]

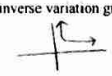
Constant _____

Equation

8 Draw an example of a direct variation graph



9 Draw an example of an inverse variation graph



10 Given $k=0.7v$

a find k when $v=2.5$ $k=0.7(2.5)=1.75$

b find v when $k=-6$ $-6=0.7v$ $-8.57=v$

11 The weight of an object on Earth varies directly as the weight of the same object on the moon A 300 pound object would weigh 48 pounds on the moon How much would a 65 pound object weigh on the moon?

$x \rightarrow$ moon
$y \rightarrow$ Earth

$k=\frac{300}{48}=6.25$ $y=6.25x$

$65=6.25(x) \rightarrow \boxed{x=10.4\overline{16}}$

12 For the Choir fundraiser, the number of tickets Allie can buy is inversely proportional to the price of the tickets She can afford 15 tickets that cost $5 each How many tickets can Allie buy if each cost $3?

$x \rightarrow$ price
$y \rightarrow$ # of tickets

$k=15(5)=75$

$y=\frac{75}{x}$

$y=\frac{75}{3}=25$

$\boxed{25 \text{ tickets}}$