

# 11/5 Algebra - Downing

## Bellwork

1. Simplify:  $(3x^2y^{-4})^3 = 3^3 x^6 y^{-12} = \boxed{\frac{27x^6}{y^{12}}}$

2. Write a function for  $f$  with solutions  $f(2) = 3$  and  $f(-1) = 8$

$(2, 3)$  and  $(-1, 8)$  are points on the line.   
 $m = \frac{-5}{3}$   $x = 2$   $y = mx + b$   $f(x) = -\frac{5}{3}x + \frac{19}{3}$    
 $y = 3$   $3 = -\frac{5}{3}(2) + b$    
 $3 = -\frac{10}{3} + b$   $b = 6\frac{1}{3}$  or  $\frac{19}{3}$

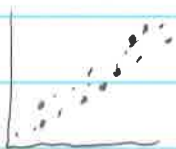
## 4.4B - Scatter Plots - Using GDC and estimating correlation coefficient

Scatter Plot: a graph with points plotted to show a possible relationship between two sets of data.

Correlation: describes the relationship between two data sets

### Positive Correlation

Both sets of data value increases



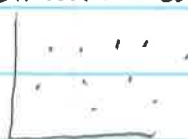
### Negative Correlation

One set of data values increases as the other set decreases



### No Correlation

There is no relationship between the data sets



Correlation Coefficient:  $-1 \leq r \leq 1$

" $r$ " represents how close the data is related. The closer to  $-1$  means a strong negative relationship, closer to  $1$  means a strong positive relationship.

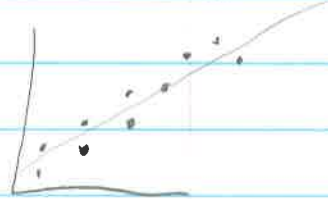
$\rightarrow -1$   
Strong negative relationship



$1 \leftarrow$   
Strong positive relationship



$r = 0.5 \leftarrow$  Not exactly on the line.



HW - 4.4 pg 199 #3-12 online assignment