

MATH 100 Class Session 10/13/2008

- 1. For the following exercises use your general knowledge of the phenomenon to sketch a graphical model of the relationship between the pair of variables.**

The height (Y) of a corn stalk and the number of weeks (X) since planting.

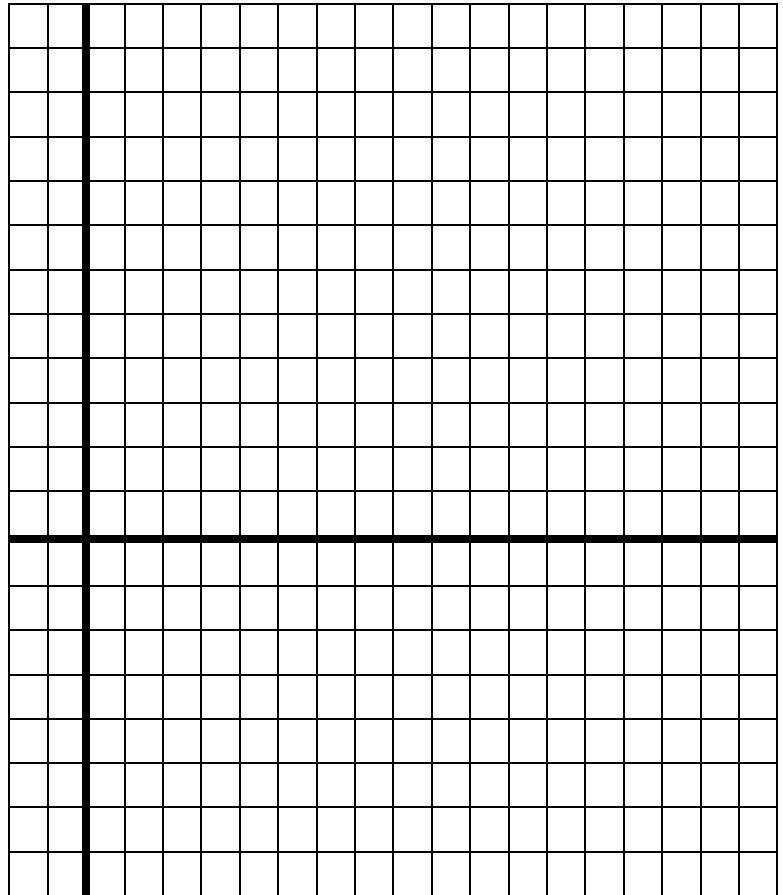
- 2. Sue is in charge of a movie series. She knows that the number of people who will go to a movie depends on the price charged per ticket. At \$5 per ticket she found that 280 people attended. The next week, at \$4 per ticket, 360 people attended. Use that data to find a modified inverse-proportion equation of the form**

$$Q = \frac{c}{P} - d$$

for the demand (Q) for movie tickets as a function of their price (P).

3. Consider the four functions: $f(x) = \frac{4}{x}$, $g(x) = \frac{4}{x-3}$, $h(x) = \frac{4}{x-3} + 5$, $j(x) = \frac{-4}{x}$

Graph the four functions on the same pair of axes and explain how the graphs are related to the graph of f in terms of shifts and flips.



4. If $f(x) = 2x + 3$, then evaluate each of the following expressions:

a. $f(5) =$

b. $f(-2) =$

c. $f(w) =$

d. $f(x - 3) =$

e. $f(x/2) =$

g. $f(3x + 5) =$

h. $f\left(\frac{x-3}{2}\right) =$

i. $f\left(\frac{1}{x}\right) =$

5. If $g(x) = 3x + 7$ and $f(x) = 2x - 4$ find rules for each of the following:

a. $g(f(x))$

b. $f(g(x))$

6. If $Z(Y)$ and $Y(X)$ are defined as below, write a rule for $Z(X)$.

$Z(Y) = 3Y + 5$ and $Y(X) = 5X$

7. If $G(y) = 4y - 3$ and $F(y) = \frac{y+3}{4}$ find rules for each of the following:

a. $G(F(y))$

b. $F(G(y))$