

Graded Homework 2

I. Pascal's Triangle Problems: (see page 993)

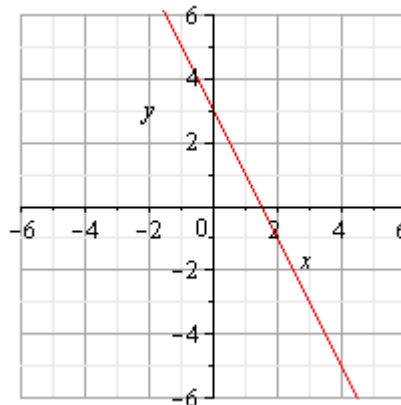
1. Write out Pascal's Triangle so that you could find $(x + y)^8$.
2. Use Pascal's Triangle to find $(x + y)^3$.
3. To find 12^2 we could take $(6 + 6)^2$. Use Pascal's Triangle to expand $(6 + 6)^2$. Do we get 144?

Expand:

4. $(x + 2)^5$.
 5. $(2m - n)^2$.
 6. $(2x + 1)^4$.
 7. $(a - 3)^2$.
8. How many terms are there in $(x + y)^{12}$?

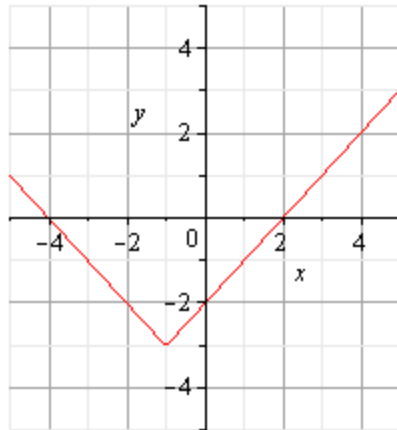
II. Function Problems:

1. If $y = f(x) = 4x - 2$, find the numerical value of: (see page 556)
 - a. $f(3)$
 - b. $f(-1)$
2. If $A(r) = \pi r^2$ represents the formula for the area of a circle, what is the value of $A(5)$ and what does it represent?
3. The graph of $y = f(x)$ is shown below. From the graph find the value of: (see page 563)
 - a. $f(2)$ and b. $f(-1)$



4. True or False? For a function the x-values represent the domain of a function and the y-values represent the range of the function.
5. Consider the function shown below:

- a. What is the domain of this function? (see pages 554 and 567)
- b. What is the range of this function?

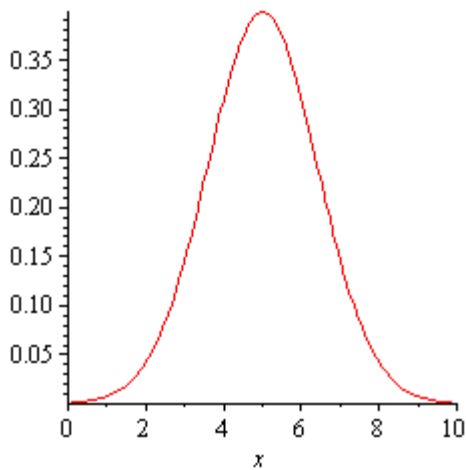


6. In the equation of a linear function, the highest power of x takes on what value?
7. a. What is the domain of the rational function $y = f(x) = \frac{1}{x-3}$? (see page 575)
- b. What is the domain of the function $y = f(x) = \sqrt{x+1}$? (see example 3 page 663)

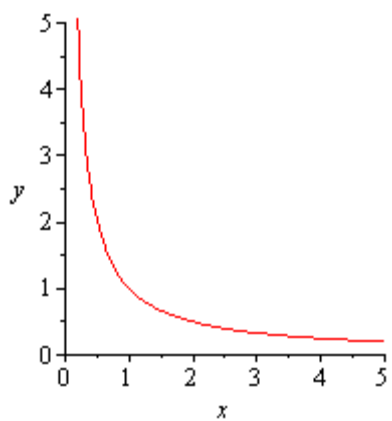
Consider the four functions graphed below, a, b, c, and d. Match the physical situation with the graph of the function that models it best (ignore the numbers on on the x and y axes.)

8. A population of fish that increases and then levels off.
9. An insect population that dies out.
10. The length of a ticket line as the rate at which people arrive in line increases.
11. The wind speed during a day that is initially calm, becomes windy, and then is calm again.
12. The intensity of a light bulb as one moves away from the light source.

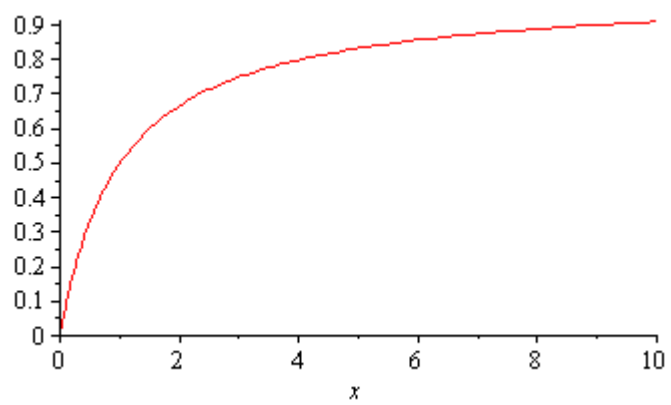
a.



b.



c.



d.

