

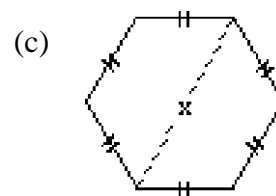
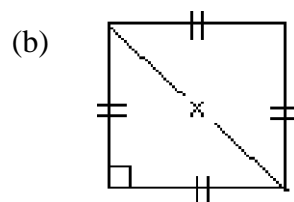
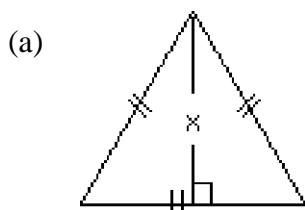
- 1) Krouse's Pizza Parlor offers the following 6 ingredients as possible toppings on a plain cheese pizza: anchovies, mushrooms, olives, onion, pepperoni, and sausage.
 - a) How many different pizzas can be ordered at Krouse's Pizza parlor? Caution, one can choose no toppings, i.e., just get a plain cheese pizza.
 - b) How many different pizzas can be ordered that have exactly two toppings?

- 2) Suppose 10 points, $\{A, B, C, \dots, J\}$, all lie on the same circle.
 - a) How many segments can we *name* using these 10 points? Note \overline{AB} and \overline{BA} are different names for the same segment, but both should be counted as they are 'different names'.
 - b) How many different triangles can we 'name' using these 10 points?
 - c) How many different quadrilaterals can we 'name' using these 10 points?
 - d) How many different n -gons can we name if $n \leq 10$?

- 3) Suppose 10 points, $\{A, B, C, \dots, J\}$, all lie on the same circle.
 - a) How many segments can we *form* using these 10 points? Note \overline{AB} and \overline{BA} are not different segments, so we only count one of them, not both.
 - b) How many different triangles can we 'form' using these 10 points?
 - c) How many different quadrilaterals can we 'form' using these 10 points? Note: we will allow quadrilaterals to have 'crossing sides'.
 - d) How many different n -gons can we form if $n \leq 10$?

- 4) Solve $|8 - 2x| \geq 22$. State your answer in interval notation.

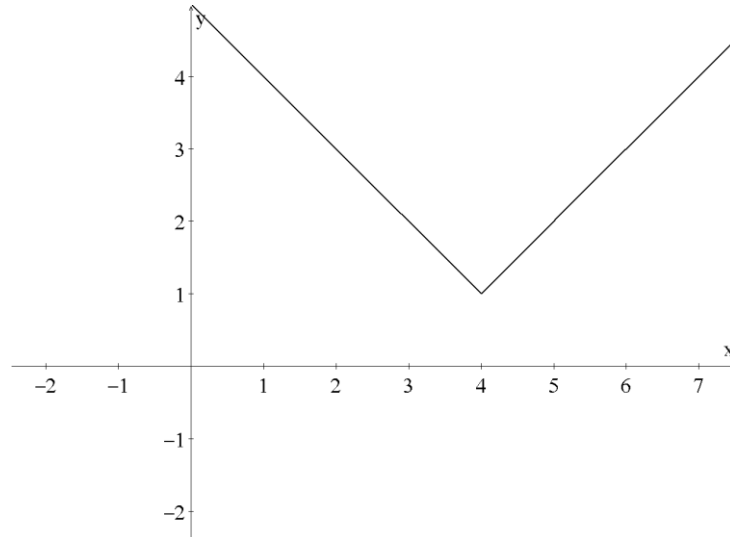
5) The perimeter of each regular figure is 240. Find x exactly.



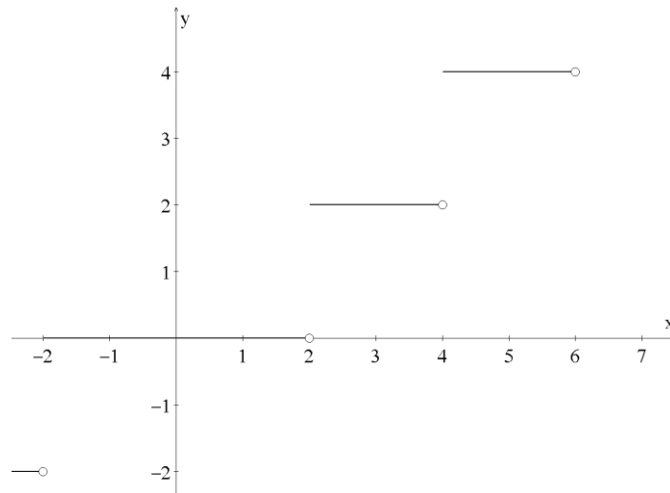
On previous problem sets you examined transformations of functions that then changed their graphs. For the following, a transformation was performed to one of the functions you studied and the resulting graph is shown. State the algebraic rule for the function graphed. (For example, $g(x) = |x| + 3$). Hint: Examine your old problem sets and when you think you have the rule, graph it on your calculator or computer to check.

6)

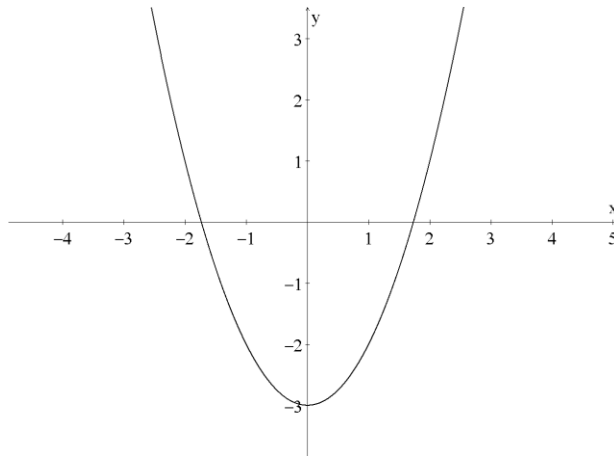
a)



b)

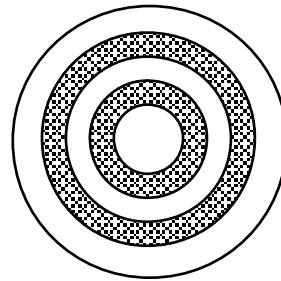


c)



7)

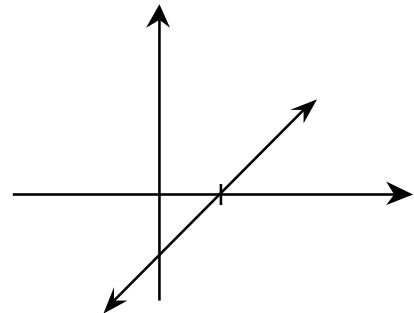
The distance between consecutive circles is 1 unit. The radius of the smallest circle is 5 units. If a dart is thrown randomly so that it hits the target, what is the probability that it will land in a shaded region?



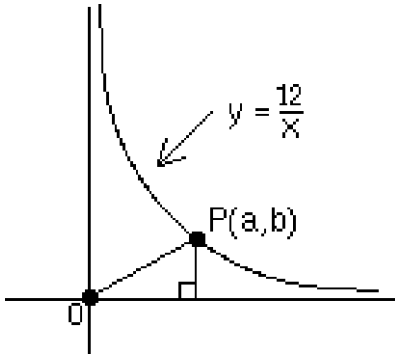
Hint: Use the ratio of areas.

8) Find the equation of the given line in slope-intercept form. (Use decimals to the nearest thousandth.)

The x intercept is 7, and the angle of inclination is 68° .



9)



Point $P(a,b)$ is on the graph of $y = \frac{12}{x}$ and $a+b=16$.

Find the exact distance OP from the point P to the origin.

Hint: Pythagoras would probably

expand $(a+b)^2$

10) Graph the system on the same graph:
$$\begin{cases} x+2y > 10 \\ 3x+4y < 12 \\ x \geq 0 \\ y < 0 \end{cases}$$

Label each line with its equations and all significant points..

11) If $p = \frac{3ab^2}{c}$ and if a is tripled, b is made quintupled, and c is quartered,

how will the value of p be changed?

12) NC Solve for x :

a)
$$\begin{vmatrix} x & 2 & -1 \\ -3 & 0 & x \\ x & 1 & 5 \end{vmatrix} = 49$$

b)
$$\begin{vmatrix} x & x+7 \\ 2 & x-1 \end{vmatrix} = 14$$

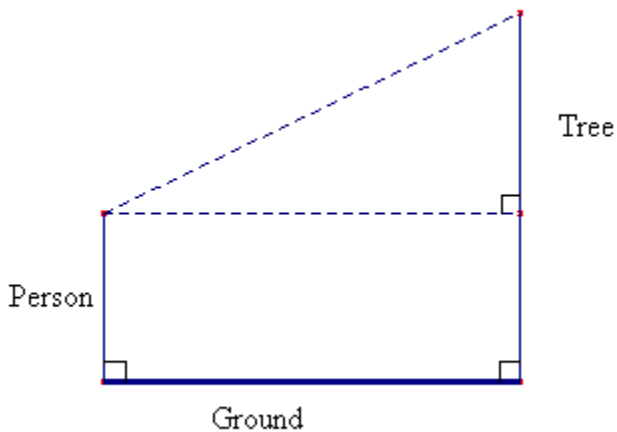
13) NC Solve each for (x,y) :

a)
$$\begin{bmatrix} 3 & x \\ y & 2 \end{bmatrix} \cdot \begin{bmatrix} 5 \\ 6 \end{bmatrix} = \begin{bmatrix} 3 \\ -10 \end{bmatrix}$$

b)
$$\begin{cases} x+2y^2 = 20 \\ 3x-2y^2 = -8 \end{cases}$$

14) If the person's "eye height" is 5' 7" from the ground, the angle from a horizontal at eye level to the top of the tree is 26.7° , and the distance to the tree is 56.4 feet, how tall is the tree?

Give your answer in feet and inches, with the inches computed to the nearest tenth.



15) The amount of money (rounded to the nearest dollar amount) of 50 shoppers in a grocery store was recorded and ordered from smallest (\$3) to largest (\$70).

3 6 6 8 9 10 11 11 12 12
 13 13 14 14 14 15 15 16 17 18
 18 18 18 19 19 19 20 21 23 26
 27 28 29 30 31 32 33 33 34 36
 37 39 40 43 45 52 61 63 64 70

a) List the measures of central tendency (mean, median, midrange and mode) for these data. Be sure to label each value.

b) Draw a boxplot for these data. Label key points.

16) The equations $\begin{cases} x = 3t - 15 \\ y = 7 + 4t \end{cases}$ describe a line.

a) Find the x and y intercepts of this line.

b) What value of t determines the x -intercept?

c) What value of t determines the y -intercept?