

Answer each question as best you can. Show all your work for full credit.

1. John gets a new job at a company. The following table shows the linear relationship of John's total earnings (y) over time in months (x). **GOOGLE: WRITE A LINEAR EQUATION FROM A TABLE**

John's Earnings	
Time (months)	Amount (\$)
1	700
2	900
3	1100

- a) Figure out the pattern and fill in the missing values for the table.
- b) Write the equation that relates x and y . Let x represent the number of months and y represent John's total earnings.
- c) Use the equation to find John's total earnings in 10 months.
- d) Use the equation to find how many months it takes John to earn \$5,300.

2. Evaluate the expression below for $x = -3$ and $y = 9$. **GOOGLE: EVALUATE THE EXPRESSION**

a) $|1 - y| + x$

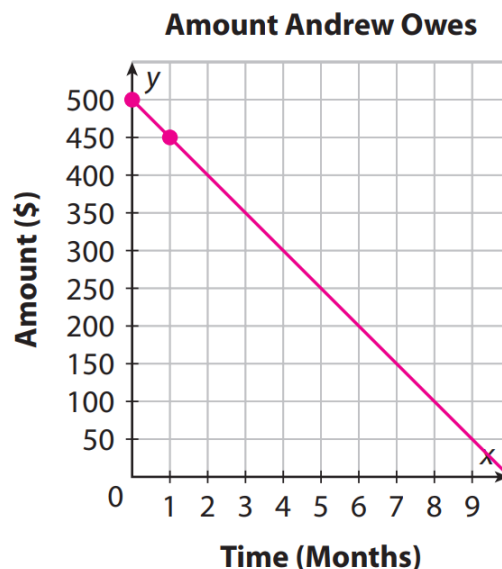
b) $\frac{3y - x^2}{5x}$

c) $f(y) = \sqrt{18 - y} - 7$

3. Andrew wants to buy a smart phone. His parents will pay for the phone and Andrew will make monthly payments until the entire amount is repaid. The loan repayment represents a linear situation in which the amount y that Andrew owes his parents is dependent on the number x payments he has made.

GOOGLE: DETERMINE WHAT THE SLOPE AND Y-INTERCEPT MEAN FROM A GRAPH

- a) How much did Andrew's parents pay for the phone? How do you know?
- b) What is the slope of the line? What does it tell you?
- c) Write the equation of the line.
- d) After 5 months, how much more money does Andrew owe his parents?



4. For each of the following, if there:

- is enough information to write an equation in slope-intercept form, write “enough information” and find the rule
- is not enough information, tell what you would need to write the equation in slope intercept form.

GOOGLE: WRITE THE EQUATION OF A LINE GIVEN CERTAIN INFORMATION

- a) Line 1 passes through the origin and has a slope of $-1/3$.
- b) Line 2 passes through the point $(-4, -2)$.
- c) Line 3 has a slope of 8 and a y-intercept of -2.
- d) Line 4 passes through the point $(2, -8)$ and is parallel to the x-axis.
- e) Line 5 is perpendicular to the line $y = -1$.
- f) Line 6 passes through the points $(-7, 9)$ and $(1, 1)$.

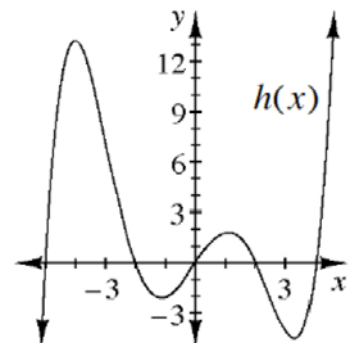
5. Evaluate the following: **GOOGLE: FUNCTION NOTATION INPUTS AND OUTPUTS**

a) Find $f(-2)$ given $f(x) = 3x^2 - 2x$.

b) Refer to the graph to the right.

1) Find $h(1)$.

2) Find x when $f(x) = 0$.



c) Refer to the table at the right.

x	3	2	1	0	1	2	3
f(x)	-3	-1	1	3	5	7	9

1) Find $f(2)$.

2) Find x when $f(x) = 7$.

d) Find $f(-4)$ for function $f(x)$ and use the output as the input for function $g(x)$.

$$f(x) = x^2 - 7$$

$$g(x) = \sqrt{x - 5}$$

1) What is the output for function $g(x)$?

2) Will function $f(x)$ ever have outputs that will not be allowable inputs for function g ? Explain your reasoning.