FIND THE EQUATION OF A LINE GIVEN A POINT AND SLOPE

➢ **Find the equation of the line that contains the given point and has the given slope.**

1) Point $(0, 5)$, $m = 2$

2) Point $(2, 3)$, $m = \frac{1}{2}$

3) Point $(3, 0)$, $m = -\frac{5}{3}$

4) Point $(-1, 7)$, $m = -3$

5) Point $(0, 0)$, $m = \frac{1}{2}$

6) Point $(-2, 3)$, $m = 0$

7) Point $(-5, -1)$, slope is undefined.

8) Point $(-3, -2)$, $m = 0$

9) Point $(0, 4)$, slope is undefined.

FIND THE EQUATION OF A LINE GIVEN TWO POINTS

➢ **Find the equation of the line that contains the given points.**

10) $P_1(0, 5), P_2(3, 5)$

11) $P_1(0, -3), P_2(-4, 5)$

12) $P_1(0, 4), P_2(2, 0)$

13) $P_1(-2, 5), P_2(-2, -5)$

14) $P_1(-3, 3), P_2(-2, 3)$

15) $P_1(0,3), P_2(3, 0)$

16) Point $(-5, -1)$, slope is undefined.

17) Point $(-3, -2)$, $m = 0$

18) Point $(0, 4)$, slope is undefined.

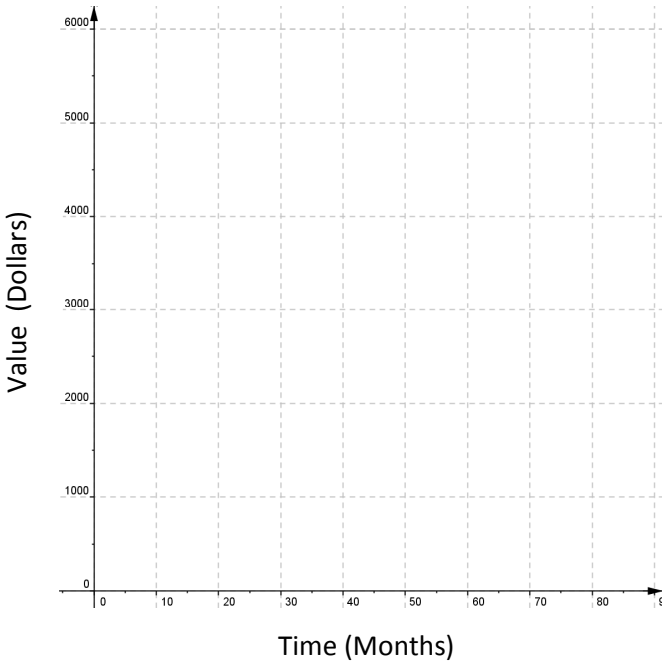
APPLICATION

19) Suppose that you own a car that is presently 30 months old. From an automobile dealer's "Blue Book" you find that its present trade-in value is $3,300. From an old Blue book you find that its trade-in value 20 months ago was $4700. Assume that its trade-in value decreases linearly with time.

a. Find the **equation** expressing the trade in value of your car as a function of its age in months.

Equation:

b. Graph the equation found in **part a**.



c. You plan to get rid of the car when its trade-in value drops to $1000. How much longer can you keep the car?

Months

d. By how many dollars does the car "depreciate" (decrease in value) each month? What part of the mathematical model tells you this?

Depreciation rate:

What part of the model gives you this information?

e. When do you predict that the car will be worthless?

Months

What point on the graph from **part b** gives you this information (Name)

f. According to your linear model, what was the trade-in value of your car when it was new?

New Price of car:

What point on the graph from **part b** gives you this information? (Name)