Model Meaning Match

Decide whether each statement explains a rate or a starting value.

CCSS.Math.Content.HSS-ID.C "Interpret linear models"

NAME _____ DATE _____

RATE OF CHANGE

A slope statement tells how much the output changes for each 1-unit increase in the input.

In R = 6a + 13, 6 means a robot travels 6 meters for each minute.

STARTING VALUE

An intercept statement tells the value of the output when the input is 0.

In L = 2d + 90, 90 means a library has 90 books at day 0.

1 SORT

8 items

Part 1: Circle the category for each statement; Part 2: Choose two numbered items, one from each category, and explain which number gives the rate or the value at input 0.

1.	For C = 3.50g + 8, 3.50 means the cost rises $3.50 for each game played.	SLOPE INTERCEPT
2.	For W = 12r + 55, 55 means there are 55 liters of water when r = 0.	SLOPE INTERCEPT
3.	For A = 25 + 6t, 25 means the account has $25 at t = 0.	SLOPE INTERCEPT
4.	For F = 140 - 7d, −7 means the fuel amount drops 7 liters each day.	SLOPE INTERCEPT
5.	For P = 2.2h + 5, 2.2 means a plant grows 2.2 centimeters each hour.	SLOPE INTERCEPT
6.	For T = 72 - 4m, −4 means the temperature falls 4 degrees each minute.	SLOPE INTERCEPT
7.	For S = 9x + 30, 30 means a player has 30 points when x = 0.	SLOPE INTERCEPT
8.	For E = 0.8k + 2.4, 0.8 means a taxi charge increases $0.80 per kilometer.	SLOPE INTERCEPT

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write one new linear-model statement for SLOPE and one new linear-model statement for INTERCEPT. Include an equation and explain the number you chose in context.

SLOPE _____

INTERCEPT _____

CHALLENGE

A kayak rental uses C = 12h + 25, where C is the cost in dollars and h is the number of hours. Write one sentence interpreting 12 and one sentence interpreting 25.

ANSWER KEY

Model Meaning Match

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	For C = 3.50g + 8, 3.50 means the cost rises $3.50 for each game played.	**SLOPE**	3.50 is the change in cost per game.
2	For W = 12r + 55, 55 means there are 55 liters of water when r = 0.	**INTERCEPT**	55 is the water amount at an input of 0.
3	For A = 25 + 6t, 25 means the account has $25 at t = 0.	**INTERCEPT**	25 is the account value at an input of 0.
4	For F = 140 - 7d, −7 means the fuel amount drops 7 liters each day.	**SLOPE**	−7 is the change in fuel amount per day.
5	For P = 2.2h + 5, 2.2 means a plant grows 2.2 centimeters each hour.	**SLOPE**	2.2 is the growth rate per hour.
6	For T = 72 - 4m, −4 means the temperature falls 4 degrees each minute.	**SLOPE**	−4 is the temperature change per minute.
7	For S = 9x + 30, 30 means a player has 30 points when x = 0.	**INTERCEPT**	30 is the number of points at an input of 0.
8	For E = 0.8k + 2.4, 0.8 means a taxi charge increases $0.80 per kilometer.	**SLOPE**	0.8 is the charge increase per kilometer.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **SLOPE**: For Q = 7d + 11, 7 means a machine makes 7 parts each day.
- **INTERCEPT**: For B = 5w + 60, 60 means a savings jar holds $60 at week 0.

Challenge: The 12 means the kayak rental costs $12 for each hour. The 25 means the rental costs $25 when h = 0, which is a starting fee.

Sort answers are 1 SLOPE, 2 INTERCEPT, 3 INTERCEPT, 4 SLOPE, 5 SLOPE, 6 SLOPE, 7 INTERCEPT, 8 SLOPE. In Part 2, look for an explanation that identifies a per-unit change for slope and an input of 0 for intercept.