LESSON MAKER PRO

Graph Detective

Spot direction and changing rates

GRADE 8 · 8A.AF.A.8

8A.AF.A.8 "Analyze the relationship (increasing or decreasing, linear or non-linear) between two quantities represented in a graph."

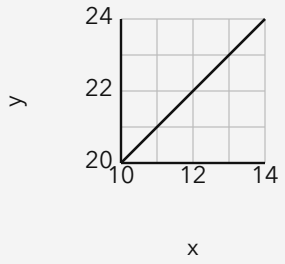
NAME _____ DATE _____

READ THE SHAPE

As x moves right, a graph increases if y rises and decreases if y falls. A straight graph is linear because y changes by the same amount for each equal step in x. A curved graph is non-linear.

WORKED EXAMPLE

Classify the graph.

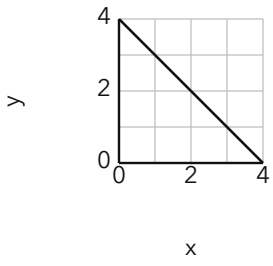


1. Move right: y rises.
2. The graph is straight, so equal steps in x give equal changes in y.

Answer: Increasing and linear.

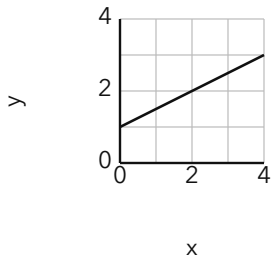
PRACTICE 4 problems

1 Classify the graph.



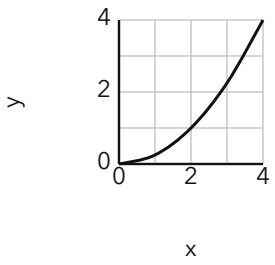
ANSWER _____

2 Classify the graph.



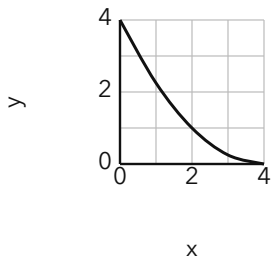
ANSWER _____

3 Classify the graph.



ANSWER _____

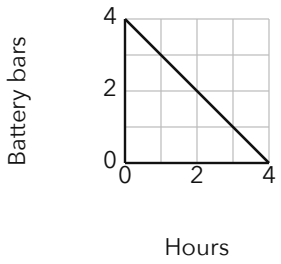
4 Classify the graph.



ANSWER _____

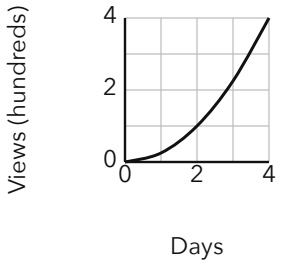
APPLY IT Show your work

1 A phone's battery bars are shown over time. Classify the relationship.



ANSWER _____

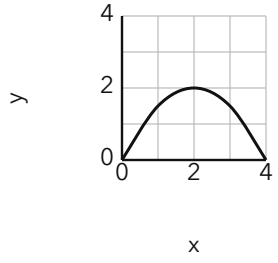
2 A video's total views are shown over time. Classify the relationship.



ANSWER _____

CHALLENGE One step up

Where is the graph increasing, and where is it decreasing? Explain why the whole graph is non-linear.



WORK SPACE AND ANSWER

ANSWER KEY

Graph Detective

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Classify the graph.	**Decreasing and linear.**
2	Classify the graph.	**Increasing and linear.**
3	Classify the graph.	**Increasing and non-linear.**
4	Classify the graph.	**Decreasing and non-linear.**

PART 2 · APPLY IT

1. **Decreasing and linear.** The battery bars fall as time passes. The straight graph shows a constant rate of change.
2. **Increasing and non-linear.** Total views rise each day. The graph curves, so the rate of change is not constant.

CHALLENGE

The graph increases from x = 0 to x = 2 and decreases from x = 2 to x = 4. It is non-linear because it curves rather than forming one straight line.

Accept "not linear" for "non-linear." At x = 2 in the challenge, the graph changes direction.