Grade 8: Functions - STUDY GUIDE
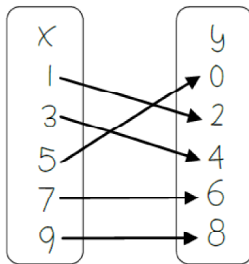
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1   **Does the relation represent a function? Explain.**

$\{(-4, 5), (-3, 4), (-2, 5), (-1, 4)\}$

Circle one: Yes   No

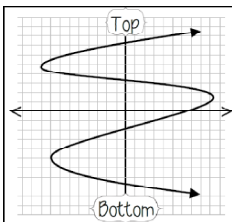Explain: _____

2   **Does the relation represent a function? Explain.**

Circle one: Yes   No

Explain: _____

3   **Does the relation represent a function? Explain.**
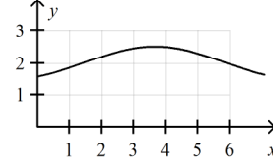

Circle one: Yes   No

Explain: _____

4   **Does the relation represent a function? Explain.**

x	1	2	4	8	16
y	2	3	2	3	2

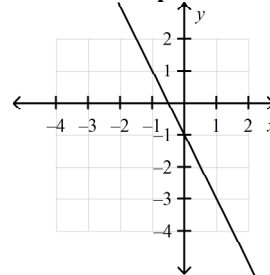Circle one: Yes   No

Explain: _____

5   **Does the graph represent a *linear* or *nonlinear* function? Explain.**

Circle one: Linear   Nonlinear

Explain: _____

6   **Does the graph represent a *linear* or *nonlinear* function? Explain.**

Circle one: Linear   Nonlinear

Explain: _____

7   **Does the table represent a *linear* or *nonlinear* function? Explain.**

x	−3	2	7	12
y	5	3	−1	−3

Circle one: Linear   Nonlinear

Explain: _____

8   **Does the table represent a *linear* or *nonlinear* function? Explain.**

x	−2	0	2	4
y	−7	−3	1	5

Circle one: Linear   Nonlinear

Explain: _____

9   **Use the table to write a linear function.**

x	–5	0	5	10
y	–10	–3	4	11

Linear Function: _____

10   **Use the table to write a linear function.**

x	–4	0	4	8
y	–20	–10	0	10

Linear Function: _____

11   **Use the table to write a linear function.**

x	–7	0	7	14
y	–12	–5	2	9

Linear Function: _____

12   **Use the table to write a linear function.**

x	3	6	9	12
y	4	0	–4	–8

Linear Function: _____

13   **Plant A grows 1.1 centimeters per day. The table shows the growth of Plant B.**

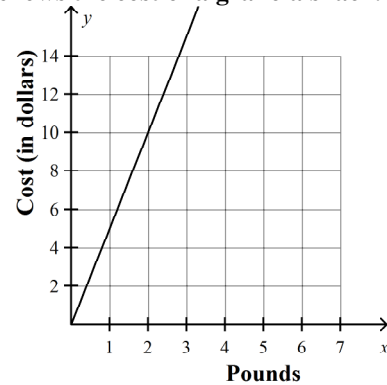| Days	1	2	3	4
Plant B Growth (centimeters)	0.5	1	1.5	2

Does Plant A or Plant B grow faster? Explain.

Circle one: Plant A   Plant B

Explain: _____

_____

14   **The cost *y* (in dollars) for *x* pounds of a trail mix is represented by the equation $y = 3x$. The graph shows the cost of a granola snack.**

Which snack food costs more per pound? Explain.

Circle one: Trail Mix   Granola

Explain: _____

_____

15   ***B*O*N*U*S***

What will it be? What will it be? :-)

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Answer Section

1	Yes, the *x*-values do not repeat.
2	Yes, there is only one line from each *x*-value.
3	No, does not pass the vertical line test.
4	Yes, *x*-values do not repeat.
5	Nonlinear; The graph is not a line.
6	Linear; The graph is a line.
7	Nonlinear; *x* increases by 5, but *y* changes by different amounts.
8	Linear; *x* increases by 2, and *y* increases by 4.

9 $y = \dfrac{7}{5}x - 3$

10 $y = \dfrac{5}{2}x - 10$ or $y = \dfrac{10}{4}x - 10$

11 $y = x - 5$

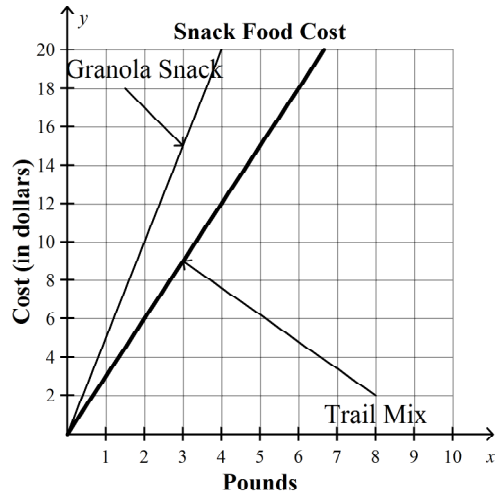12 $y = -\dfrac{4}{3}x + 8$

13 **a.** Plant A

b.
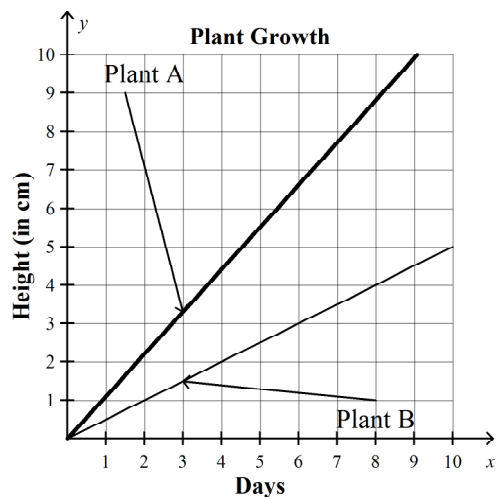
The graph that represents Plant A is steeper than the graph that represents Plant B. So, Plant A grows at a faster rate.

14 **a.** the granola snack

b.

The graph that represents the granola snack is steeper than the graph that represents trail mix. So, the granola snack costs more per pound.

15 :-)