Mathematics Gr. 7

1.4 Proportional and Nonproportional Relationship

1. What is the relationship between the number of hours worked and the amount earned shown in the table?

Hours	Amount Earned ($)
5	20
10	50
15	90

A. ○ cannot be determined

B. ○ ratio

C. ○ non-proportional

D. ○ proportional

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2. Angel runs 4 miles per day. What is the relationship between the number of days and how many miles he has run?

A. ○ cannot be determined

B. ○ proportional

C. ○ non-proportional

D. ○ ratio

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3. Liam earns $7 an hour shoveling snow. What is the relationship between the number of hours and the amount he earns?

A. ○ proportional

B. ○ cannot be determined

C. ○ non-proportional

D. ○ ratio

---

4. In an equilateral triangle, what is the relationship between the length of a side and the perimeter?

A. ○ ratio

B. ○ cannot be determined

C. ○ non-proportional

D. ○ proportional

Outcomes

- To identify proportional relationships
- To use equivalent ratios

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1.5 Graph Proportional

1. The graph of a proportional relationship is

A. ○ a straight line through the point (0, 1).

B. ○ a straight line through the point (0, 0).

C. ○ a straight line through the point (1, 1).

D. ○ a straight line through any two points.

---

2. Which of the following situations would *not* be a proportional relationship?

A. ○ Rosa has $50 and spends $6 every day for lunch for one week.

B. ○ Jamie reads 22 pages per day for 8 days.

C. ○ Matthew earns $12 per hour.

D. ○ Candles costs $10 each.

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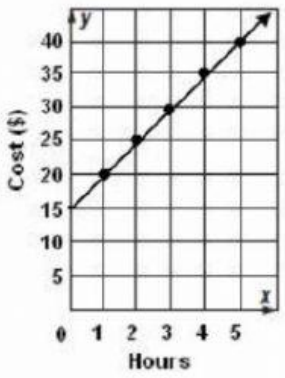
3. Kayla earns $6 per hour babysitting. Use the graph below to determine whether the amount of money Kayla earns is proportional to the number of hours she babysits.



A. ○ proportional; the graph is a straight line and the rate of change is constant

B. ○ not proportional; the graph is a straight line, but does not pass through the origin

C. ○ proportional; the graph is a straight line through the origin

D. ○ not proportional; the graph is not a straight line

Outcomes

To determine whether two quantities are proportional by graphing them on a coordinate plane

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1.7 Constant Rate of Change

1. What is the constant rate of change between the quantities in the table?

Hours	Amount Earned
2	10
4	20
6	30
8	40

A. ○ $1 per hour

B. ○ $40 per hour

C. ○ $5 per hour

D. ○ $10 per hour

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2. What is the constant rate of change between the quantities in the table?

Time (min)	Water left in pool (gal)
10	80
20	60
30	40
40	20

A. ○ -20 gal per minute

B. ○ -2 gal per minute

C. ○ 2 gal per minute

D. ○ -10 gal per minute

---

3. What is the constant rate of change between the quantities in the table?

Time (min)	Calories
15	60
30	120
45	180
60	240

A. ○ 4 calories per minute

B. ○ 15 calories per minute

C. ○ 40 calories per minute

D. ○ 60 calories per minute

---

4. What is the constant rate of change shown in the graph?

A. ○ 55 mph

B. ○ 65 mph

C. ○ 70 mph

D. ○ 130 mph

Outcomes

to find the constant rate of change

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1.8 Slope

1. The points given in the table lie on a line. What is the slope of the line?

x	y
1	5
2	7
3	9
4	11

A. ○ 11

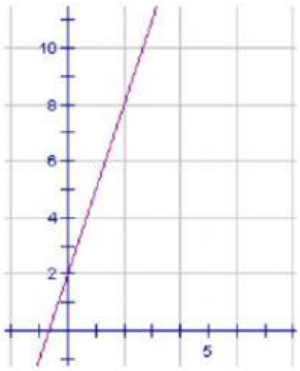
B. ○ 2

C. ○ 3

D. ○ 5

---

2. What is the slope of the line shown in the graph?



A. ○ 3

B. ○ –1

C. ○ $\frac{1}{3}$

D. ○ 2

---

3. Determine the slope of the line that passes through (2, 2) and (5, 8).

A. ○ $\frac{10}{7}$

B. ○ –2

C. ○ 2

D. ○ $\frac{1}{2}$

---

4. What is the slope of the line that passes through (8, 4) and (6, 7)?

A. ○ $\frac{2}{3}$

B. ○ $-\frac{3}{2}$

C. ○ $-\frac{2}{3}$

D. ○ $\frac{3}{2}$

Outcomes

- find the slope of a line
- interpret what the slope of a line represents

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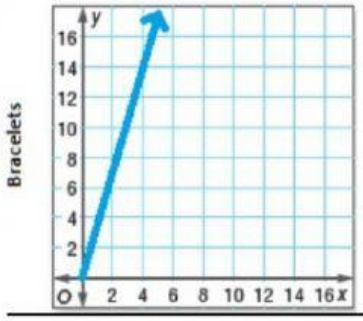
1.9 Dirct Variation

1. The number of bracelets Robin makes varies directly as the number of hour she works. How many bracelets can she make in 3.5 hours?



A. ○ 9.5

B. ○ 13.5

C. ○ 12.5

D. ○ 10.5

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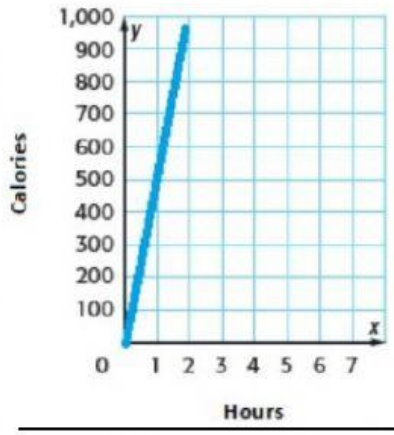
2. The number of calories Kira burns while riding a bike varies directly with the number of hours the bike is ridden. How many calories are burned in 60 minutes?



A. ○ 60

B. ○ 2880

C. ○ 480

D. ○ 960

---

3. A car travels 195 miles in 3 hours. Assuming that the distance the car travels varies directly with the time, how far will the car travel in 5.5 hours?

A. ○ 357.5 miles

B. ○ 300 miles

C. ○ 220.5 miles

D. ○ 195 miles

Outcomes

find the constant of proportionality of a direct variation from a graph or an equation

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