

Proportional Reasoning Study Guide

Name Kelly Period
Date

1. Which equation ratio is NOT equivalent to $\frac{3}{8}$?

a. $\frac{12}{32}$

b. $\frac{6}{16}$

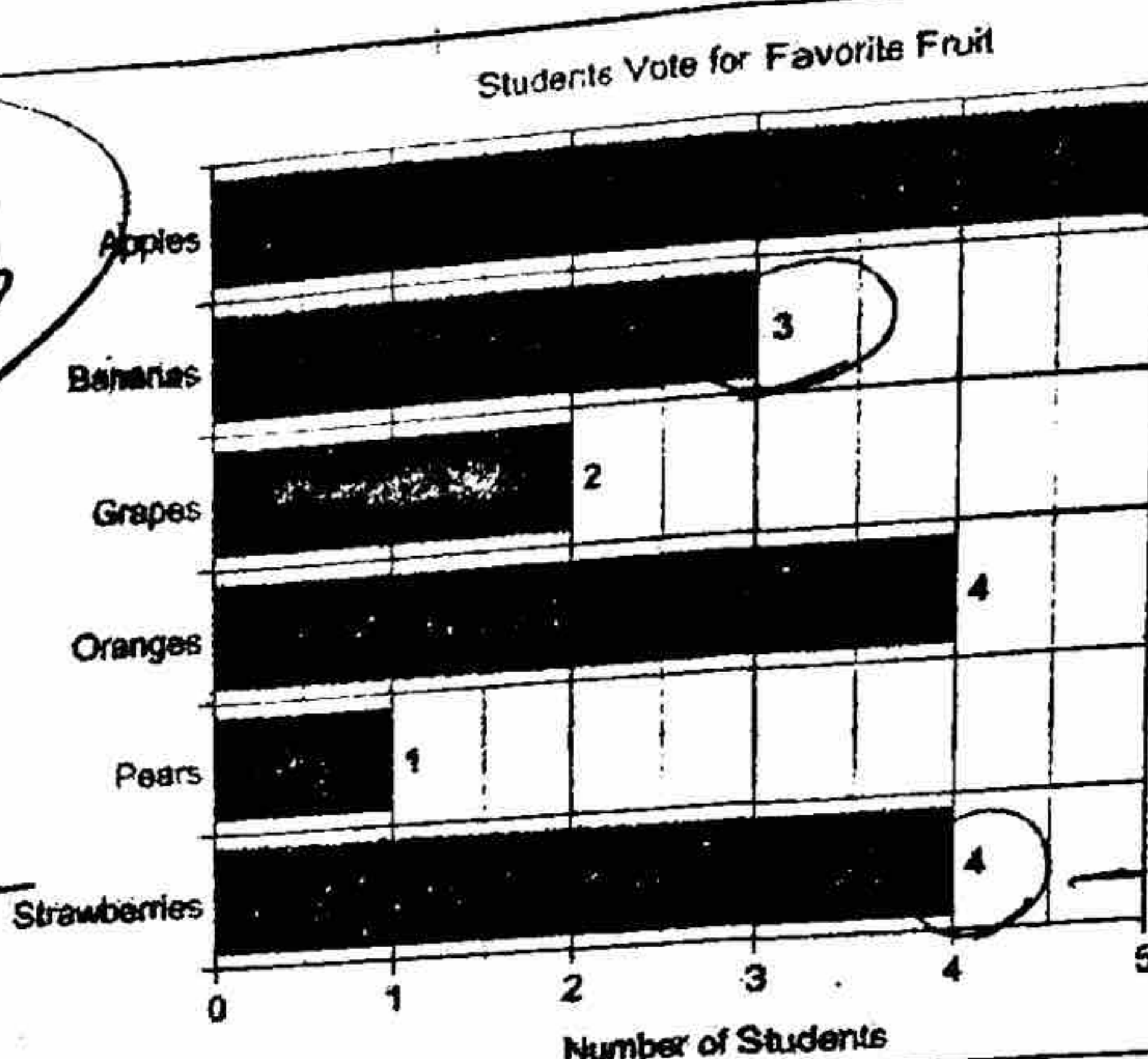
c. $\frac{15}{40}$

d. $\frac{9}{33}$ $\frac{3}{11}$

2. The graph at the right shows the number of students who voted for their favorite fruit.

Write the ratio in simplest form for the number of students who voted for bananas to the total number of students who voted for strawberries and apples.

bananas 3
StA 9



3. Stain-Free laundry detergent is available in three sizes, 64-ounces, 36-ounces and 12-ounces. The 64-ounce bottle costs \$4.99, the 36-ounce bottle is \$3.29 and the 12-ounce bottle is \$0.79. Of the three sizes, which is the best buy?

\$
ounces

$\frac{4.99}{64} = 0.0779... \text{ } 0.08$

$\frac{3.29}{36} = 0.0914... \text{ } 0.09$

$\frac{0.79}{12} = 0.0658... \text{ } 0.07$

4. Last week Mary drove her car 430 miles and used 20 gallons of gasoline. Gasoline costs \$2.12 per gallon. Find the cost of gasoline required for a 258-mile trip.

$\frac{\text{miles } 430}{\text{gallons } 20} = \frac{258}{x}$

$12 \text{ gallons} \times 2.12 = \25.44

5. The ratio of width to length in a recreation room is the same as in the dining room. The dining room measures 12 feet wide by 15 feet long. If the recreation room is 16 feet wide, how long is it?



$\frac{w}{l} = \frac{12}{15} = \frac{16}{x}$
20 feet

6. A wedding reception has been planned to accommodate 96 people. If 3 tables of 8 are reserved for the wedding party, what percent of the seating is available for guests?

$3 \times 8 = 24$

$\frac{24}{96} = \frac{x}{100}$

25% reserved

75% left

7. Three of the Carolina Panthers have the last name of Williams, but there is only one Kuechly. There are 52 players on the Carolina Panthers team. What percent of the team members have the last name of Williams or Kuechly. Round to the nearest percent.

$\frac{4}{52} = \frac{x}{100}$

7.69... 8%

8. Sarah made a scale drawing of a dinosaur. She made the height of the dinosaur $2\frac{1}{2}$ inches. The actual height of the dinosaur is 9 feet. What scale did Sarah use for her drawing?

$\frac{M}{A} = \frac{2.5 \text{ in}}{9 \text{ ft}}$

$2.5 \text{ in} = 9 \text{ ft}$

$1 \text{ in} = 3.6 \text{ ft}$

$5 \text{ in} = 18 \text{ ft}$

9. The scale on a map is 1 inch = $2\frac{1}{3}$ miles. If two landmarks on the map are $1\frac{3}{4}$ inches apart, what is the actual distance between them?

Scale

$\frac{M}{A} = \frac{1 \frac{3}{4} \text{ in}}{2 \frac{1}{3} \text{ mi}}$

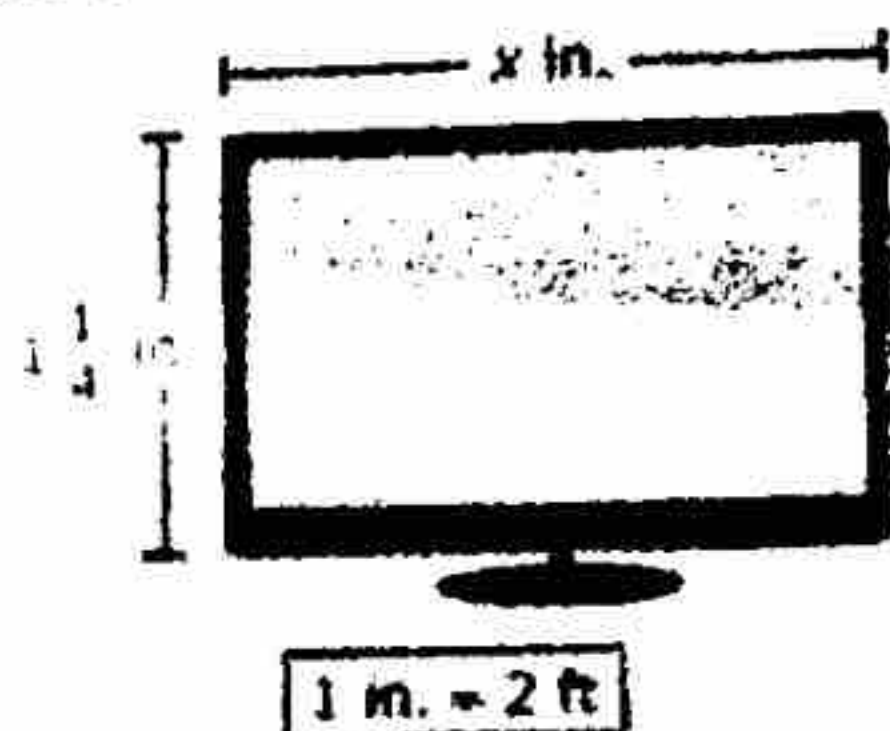
$4\frac{1}{12}$ miles

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10. A scale drawing of a television is shown.



If the width of the actual television is 4 feet, which proportion could be used to find the width of the drawing, x , in inches?

a. $\frac{1}{2} = \frac{x}{4}$

b. $\frac{1}{2} = \frac{4}{x}$

c. $\frac{1}{2} = \frac{x}{48}$

d. $\frac{1}{2} = \frac{48}{x}$

11. The Giant Wheel at Cedar Point in Ohio is one of the tallest Ferris wheels in the country at 136 feet tall. If the Giant Wheel casts a 34-foot shadow, find the height of a nearby man who casts a $1\frac{1}{2}$ -foot shadow.

$$\frac{136}{34} = \frac{1.5}{x}$$

6 ft

12. A scale drawing for a room is shown. The scale for the drawing is 1 inch = 2 feet. On the drawing, the width of the room is $5\frac{1}{2}$ inches and the length is 7 inches. What are the actual dimensions of the room?

$$\frac{1}{2} = \frac{5.5}{x} = 11$$

$$\frac{1}{2} = \frac{7}{x} = 14$$

11 ft x 14 ft

13. A toy car made using a scale of 1 in = 8 ft. What is the scale factor?

$\frac{1 \text{ in}}{96 \text{ ft}}$

$\frac{1}{96}$

14.

The table shows the number of cups of soft brown sugar required for different amounts of flour in a pancake recipe. The ratio of cups of brown sugar to cups of flour is constant in each column.

Cups of Soft Brown Sugar	2	5	c	8	9
Cups of Flour	4	10	14	16	18

c = cups of soft brown sugar needed for 14 cups of flour

Which proportion can be used to find the value of c ?

A. $\frac{2}{5} = \frac{c}{10}$

B. $\frac{8}{4} = \frac{18}{c}$

C. $\frac{2}{4} = \frac{14}{c}$

D. $\frac{5}{10} = \frac{c}{14}$

15.

Which table shows a proportional relationship between the variables?

A. $\frac{1}{3}$

9	3
21	7
27	9
33	11

B.

1	4
4	7
6	9
13	16

C.

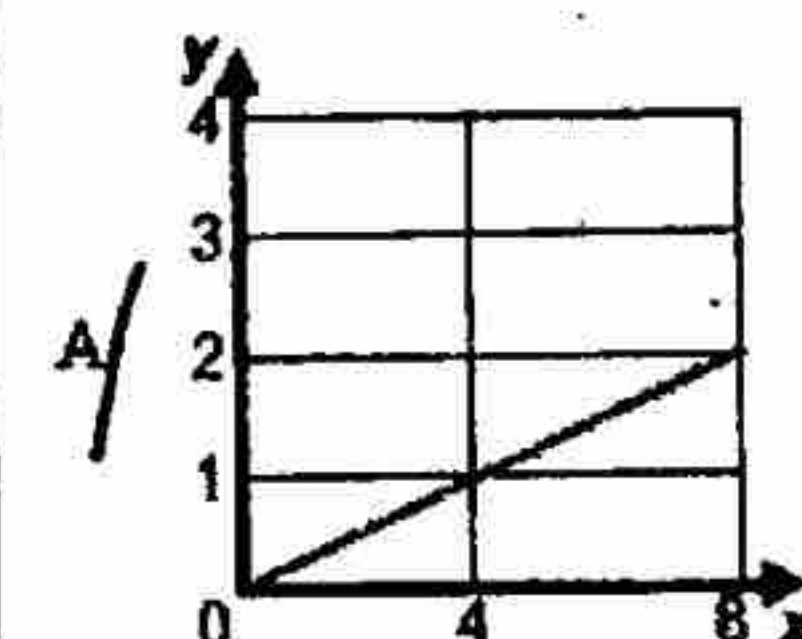
2	8
5	20
6	24
9	32

D.

7	5
12	9
13	11
19	17

16.

Which shows a constant of proportionality equal to 4?



B.

2	8
7	28
9	36

C. $y = \frac{1}{4}x$

D. $y = x + 4$

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17. What is the constant of proportionality of the table below?

X	7.5	10	17.5	20
Y	4.5	6	10.5	12

$$\frac{4.5}{7.5} = .6$$

$$.6$$

18. Julie works in the school cafeteria. She ordered 25 pounds of bananas for the students at WMS this week and paid \$14.25. Write an equation that represents the cost y , for x pounds of bananas.

$$\frac{14.25}{25} = .57$$

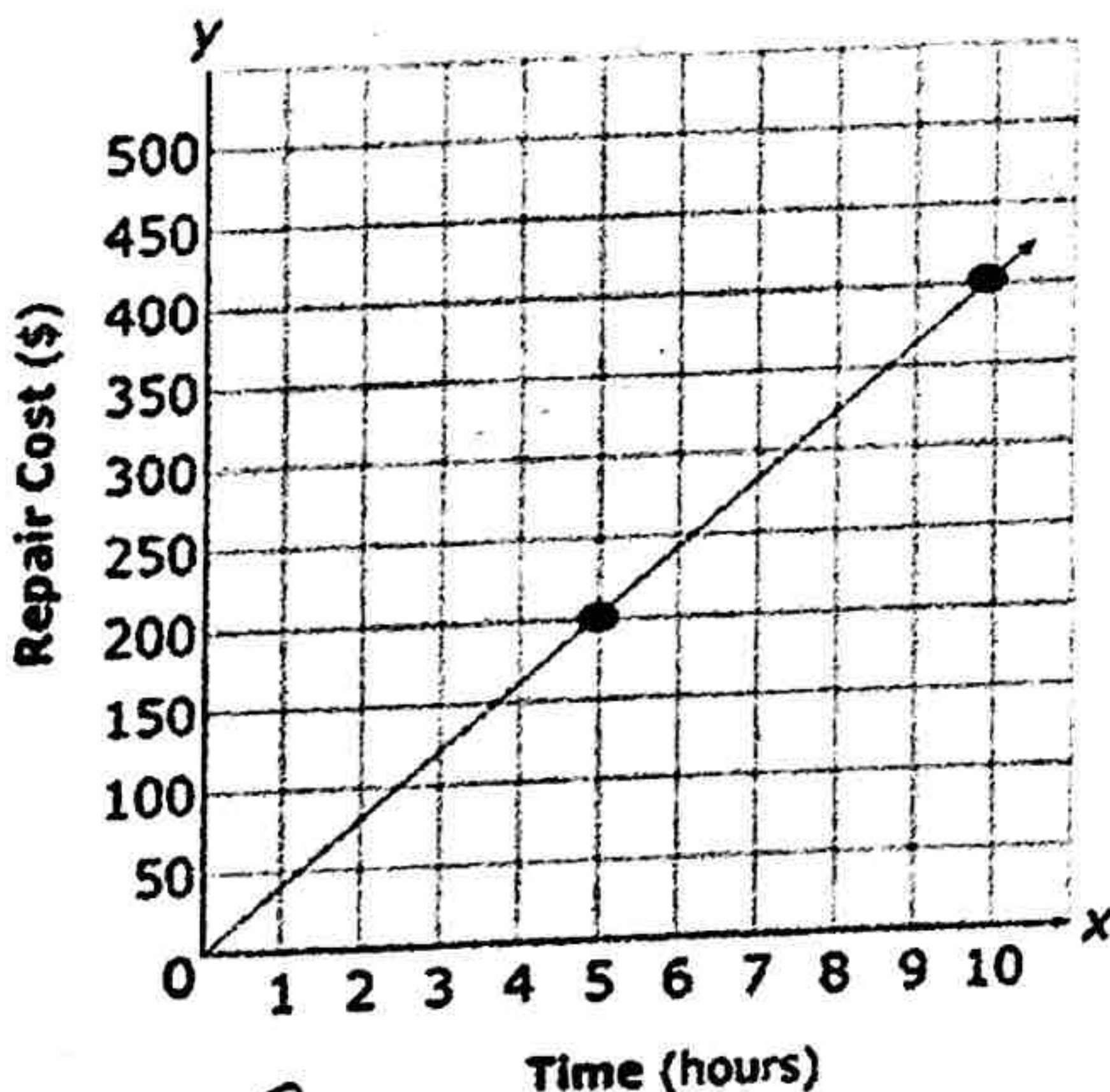
$$y = .57x$$

19. Which of the following is true?

- ☒ A. Independent: the number of lawns you mow
Dependent: the amount of money you earn
- ☒ B. Independent: your age
Dependent: the number of pizza slices you eat
- ☒ C. Independent: the number of umbrellas you own
Dependent: the number of inches it rains
- ☒ D. Independent: the number of books you read
Dependent: your shoe size

20. Write an equation to represent the proportional relationship shown in the graph.

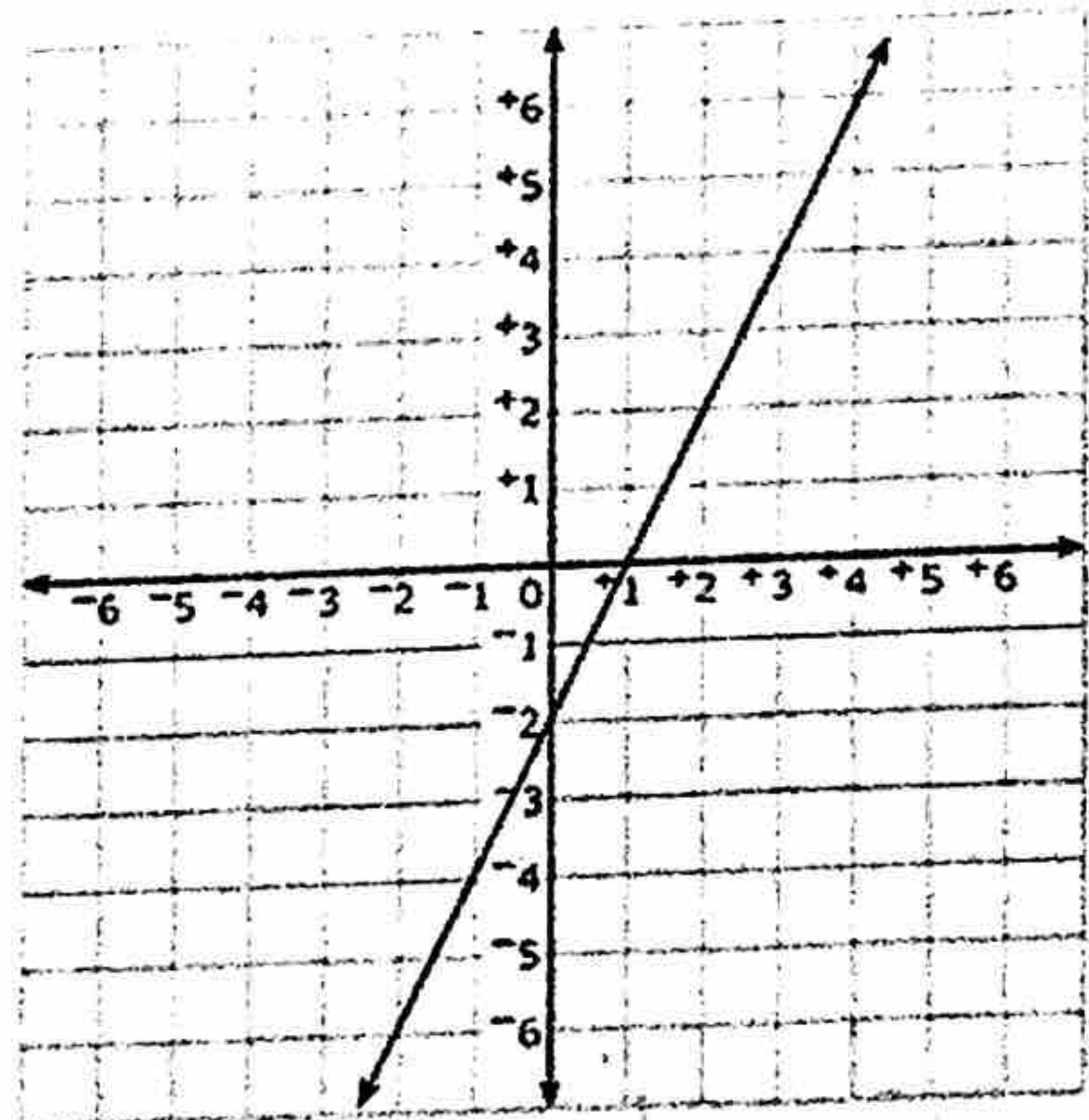
Mike's Repair Cost



$$\frac{200}{5} = 40$$

$$y = 40x$$

21. Is the graphed line below proportional or non-proportional?



Non Proportional