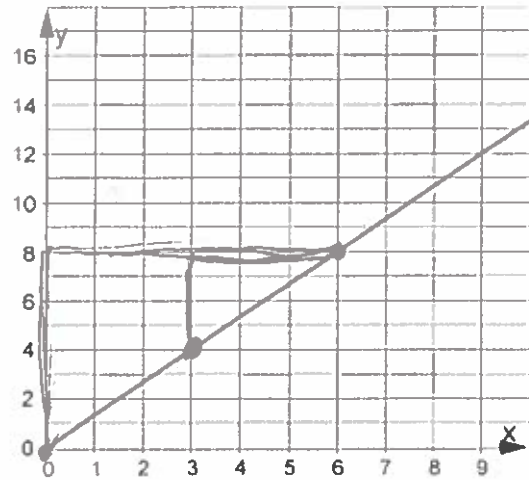# Graphing and Comparing Proportional Relationships Practice

1. Here is a graph that could represent a variety of situations.

   What is the slope of this line?

   $\dfrac{8}{6} \longrightarrow \dfrac{4}{3}$

2. A certain shade of purple paint is made by mixing blue and red paint. The relationship between the number of quarts of blue paint in the mix, x, and the number of quarts of red paint, y, is represented by the graph below.
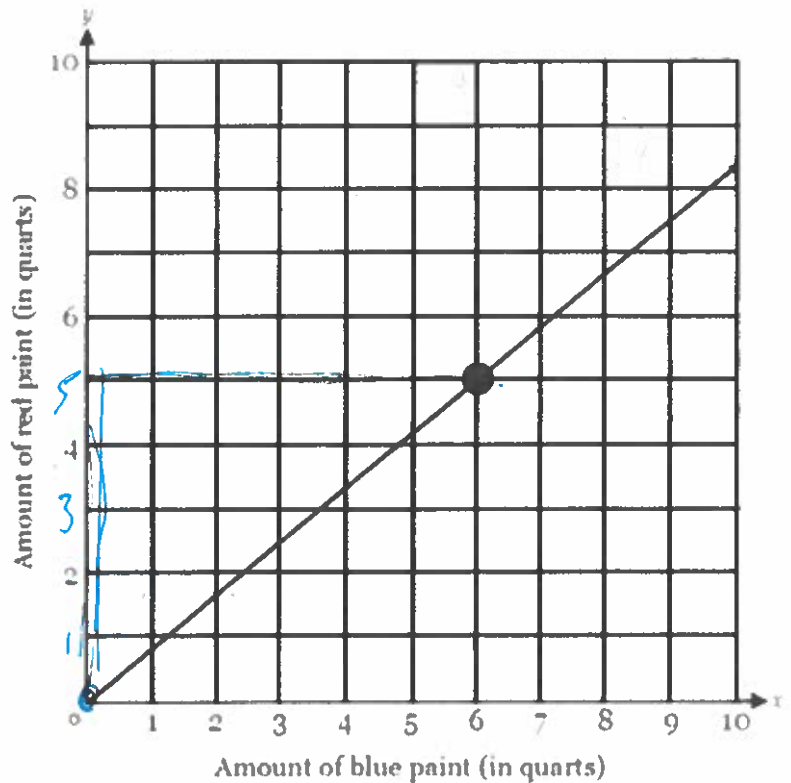
   a. What is the slope of this line?

   $\dfrac{5}{6}$

   b. What does the slope mean in context of this situation?

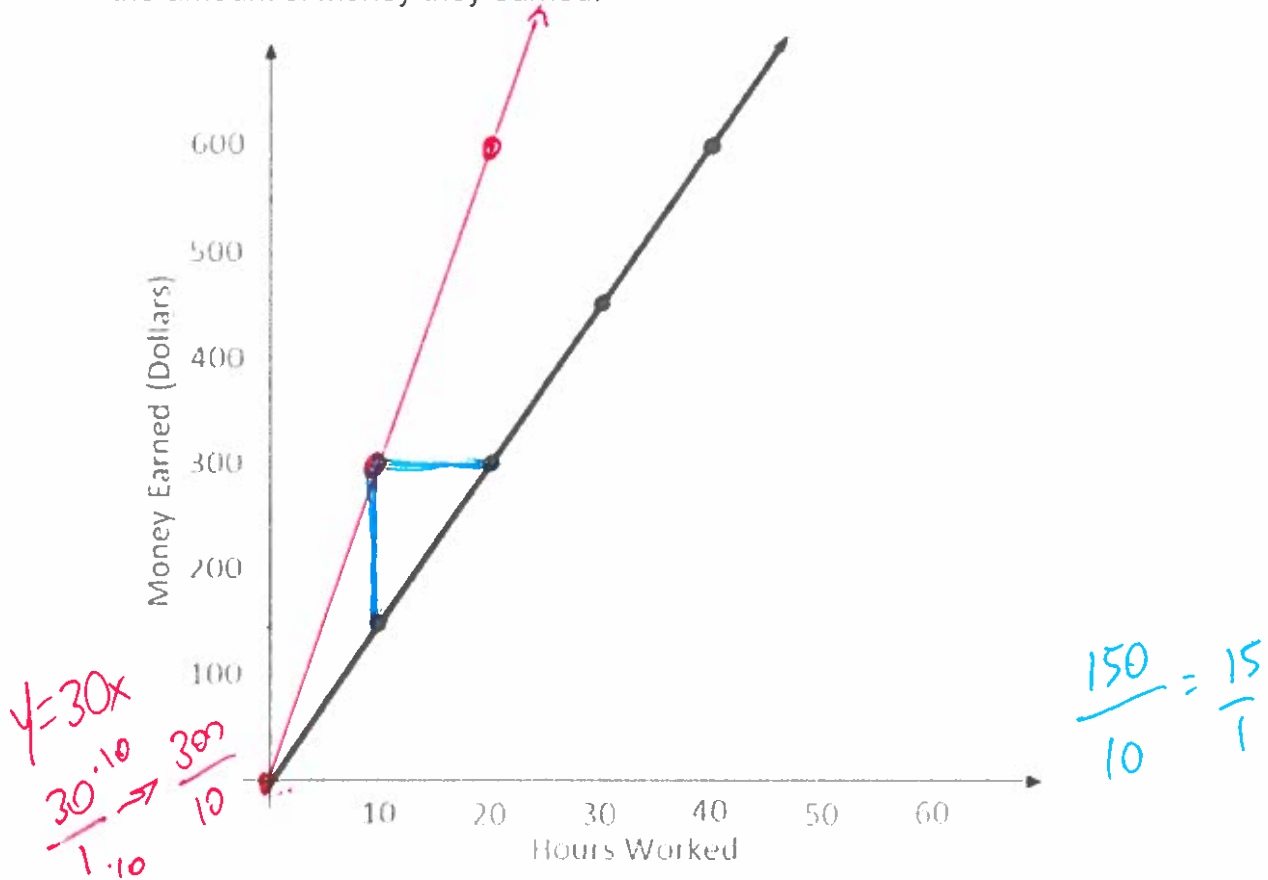   5 qt of red paint for every 6 qt of blue paint

   c. Write an equation to represent this line.

   $y = \dfrac{5}{6}x$

Graphing and Comparing Proportional Relationships Practice

3. Below is a graph that shows the relationship between hours a person worked and the amount of money they earned.

$y=30x$

$30 \cdot 10 \rightarrow \frac{300}{10}$

$\frac{1 \cdot 10}{}$

$\frac{150}{10} = \frac{15}{1}$

a. Write an equation to represent this situation using x to represent the hours worked and y to represent the money earned.

$y = \frac{15}{1}x$ or $y = 15x$

b. Use your equation and the graph to complete the table.

Hours Worked ✗	Money Earned ($) y
100	$100 \cdot 15 = \$1500$
$\frac{1800}{15} = 120$	1800
1	$1 \cdot 15 = \$15$

c. What would the equation be for someone who was earning twice as much money every hour?

$y = 30x$

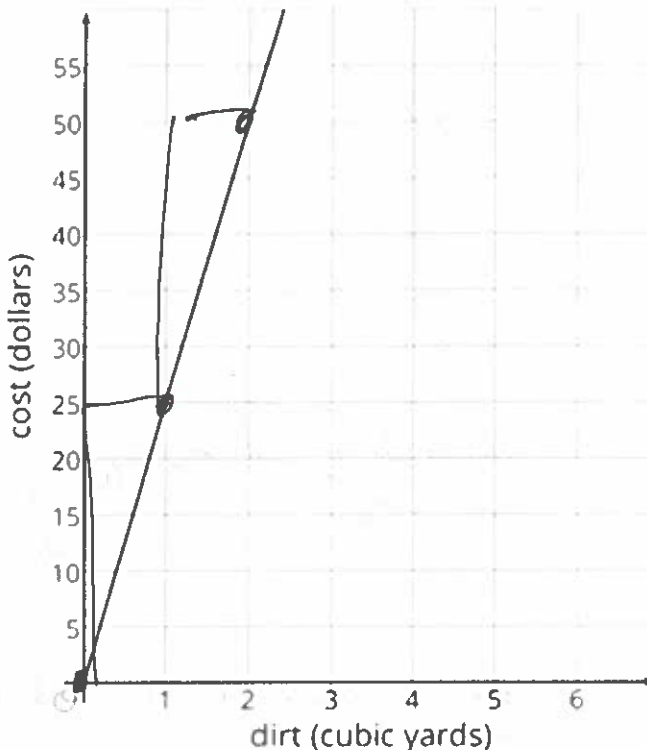d. Create a line on the graph that represents your answer for question C.

3.4 Comparing Proportional Relationships

1. A contractor must haul a large amount of dirt to a work site. She collected information from two hauling companies.

EZ Excavation gives its prices in a table:

Happy Hauling Service gives its prices in a graph:

$cost per yd^3$

$\dfrac{\Delta Y}{\Delta x}$

dirt x (cubic yards)	cost Y (dollars)
8	196
20	490
26	637

$12 \big($ 8 ... $\big) 294$

$6 \big($ 20 ... 26 $\big)$ 490 $\}$ 147 ... 637

$\dfrac{294}{12} = 24.5 \qquad \dfrac{147}{6} = 24.5$

cost (dollars) / dirt (cubic yards)

a. Calculate the rate of change (slope) for each relationship. What do they mean for each company?

$EZ/ \$24.50$ per yd^3 $HH/ \$25$ per yd^3

b. How much would each hauling company charge to haul 40 cubic yards of dirt?

$EZ/ 24.50 \cdot 40 = \$980$ $HH/ 25 \cdot 40 = \$1000$

c. If the contractor has 40 cubic yards of dirt to haul and a budget of $1000, which hauling company should she hire?

EZ

3.4 Comparing Proportional Relationships

2. Clare and Han have summer jobs stuffing envelopes for two different companies.

Clare's earnings can be seen in the table.

500 (

Number of Envelopes	Money in Dollars
400	40
900	90

) 50

Han earns $15 for every 300 envelopes he finishes.

$\dfrac{\$}{E.}$

a. What is the rate of change for each situation and what does it mean?

Clare $\dfrac{\$50}{500} = \dfrac{\$1}{10} = \$0.10$ per envelope   Han $\dfrac{\$15}{300} = \dfrac{\$1}{20} = \$0.05$ per envelope

b. Who would make more money after stuffing 1500 envelopes? How much more money would they make? Explain how you know.

Clare: $1500 \cdot 0.10 = \$150$ Han: $1500 \cdot 0.05$
$= \$75$

Clare makes $75 more

c. Who gets paid more in their job? Explain or show your reasoning.

Clare.
She makes double.