Solve. Show all the work.

20) Four cans of paint cost $30. How much will six cans of paint cost?

$\frac{\$30}{4 \text{ cans}} = \frac{x}{6 \text{ cans}}$

$4x = 180$

$x = \$45$ for 6 cans

21) Eight boxes cost $3. How much will twenty boxes cost?

$\frac{\$3}{8 \text{ boxes}} = \frac{x}{20 \text{ boxes}}$

$8x = 60$

$x = \$7.50$ for 20 boxes

22) Six grapefruits cost $1.92. What is the unit rate?

$\frac{\$1.92}{6 \text{ gf}} = \$0.32$ or 32¢ per g.f.

23) Three tickets to a track meet cost $15.90. How many can you buy for $26.50?

$\frac{\$15.90}{3 \text{ tickets}} = \frac{\$26.50}{x}$

$15.90x = 79.50$

$x = 5$ tickets

24) A rug 4m wide and 5m long costs $132. How much would a 3m by 4m rug of the Same material cost?

$4 \times 5 = 20\text{m}$ $3 \times 4 = 12\text{m}$

$\frac{\$132}{20\text{m}} = \frac{x}{12\text{m}}$

$20x = 1{,}584$

$x = \$79.20$

25) Three loaves of bread cost $2.67. What is the unit rate?

$\frac{\$2.67}{3} = \$0.89$ or 89¢ per loaf

26) Which is the better buy?

A) A 20-oz. can of pineapple for $0.90

B) A 24-oz. can of pineapple for $1.05

$\frac{.90}{20oz} = 0.045$ 4.5¢

$\frac{1.05}{24oz} = 0.04375$ 4.4¢ Better Buy

27) Which is the better buy?

A) A 25-pound crate of oranges for $16.

B) A 20-pound crate of oranges for $13.50.

$\frac{\$16}{25\ lb.} = \$0.64$ 64¢ Better Buy

$\frac{\$13.50}{20\ lb} = 0.675$ 67.5¢

28) Which of the following tables represents a proportional relationship?

A)

4	6	12
2	3	8

$\frac{4}{2} = \frac{6}{3} \neq \frac{12}{8}$

B)

0	1	2
3	4	5

$\frac{0}{3} \neq \frac{1}{4} \neq \frac{2}{5}$

C)

2	6	10
5	15	25

$\frac{2}{5} = \frac{6}{15} = \frac{10}{25}$ ✓

D)

3	4	6
4	5	7

$\frac{3}{4} \neq \frac{4}{5} \neq \frac{6}{7}$

29)

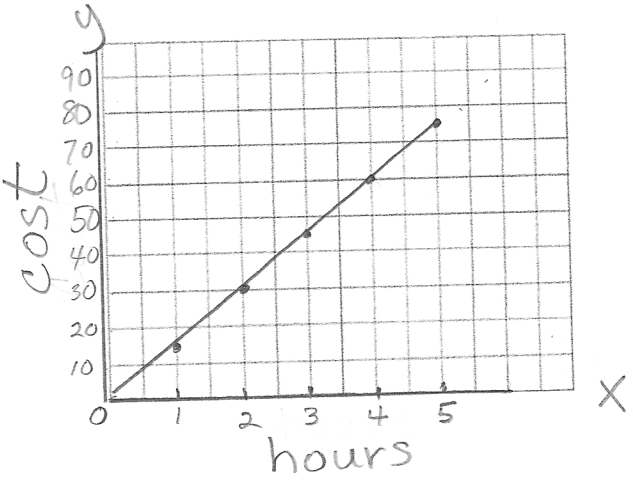
Cost For Renting A Canoe:

$15 for each hour

Make a table showing the cost of renting a canoe for 1 to 5 hours.

X hours	Y cost
1	$15
2	$30
3	$45
4	$60
5	$75

30) Graph the data from your table. Label your axes and include a title.



a) Does this graph show a proportional Relationship? Give two reasons to Support your answer.

a) yes. The graph passes through the point (0,0) and the cost varies directly with the number of hours for canoe rental. ($y = kx$)

b) Represent your graph with an equation.

b) $y = \$15x$

where: y = cost
x = hours

Do the equations below represent direct variation? If yes, identify the constant of variation (k).

31) $5x + y = 0$

$5x + y = 0$
$-5x \quad -5x$
$y = -5x$

yes, this equation has direct variation

32) $2y = 5x$

$\frac{2y}{2} = \frac{5x}{2}$
$y = \frac{5}{2}x$

yes, this equation has direct variation

33) $\frac{1}{2}y = 3x$

$\frac{2}{1} \cdot \frac{1}{2}y = 3x \cdot \frac{2}{1}$ $\quad y = 6x$

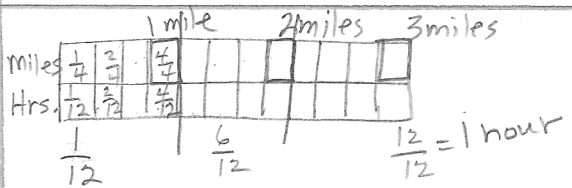
yes, this shows direct variation

34) $6 + y = 2x$

$6 + y = 2x$
$-6 \quad -6$
$y = 2x - 6$

no, this equation does not vary directly

Unit Rate Fractions. Draw a picture To help you solve the problems.



35) Maria walked ¼ of a mile in 1/12 of a hour. Compute the unit rate as a complex fraction.

$\frac{\frac{1}{4}}{\frac{1}{12}} = \frac{1}{4} \cdot \frac{12}{1} = \frac{12}{4} =$ **3 mph**

36) Neal eats 2/3 of an apple in 5/6 of a minute. Compute the unit rate as a complex fraction.

$\frac{\frac{2}{3}}{\frac{5}{6}} = \frac{2}{3} \times \frac{6^{2}}{5} =$ $\boxed{\frac{4}{15}}$

37) Which of the equations below represents a relationship where y varies directly with x?

A) $y = 5 - 2x$

B) $x = 4y - 2$

C) $y = 2 + x$

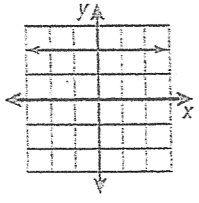
D) $y = 12x$

(D) $y = 12x$

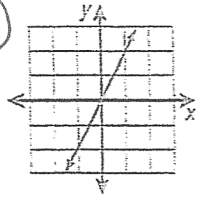
y = 12 times the value of x.
This is a direct variation.

38) Which of the following graphs represents a proportional relationship?

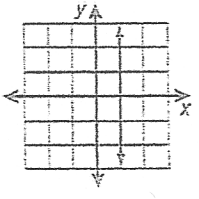
A



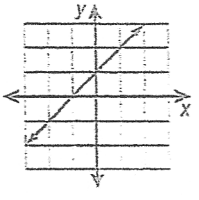
C



B



D



(C) Graph C passes through the point (0,0) and it is a straight line.

39) Which point is located on the graph of any proportional relationship?

A) (0, -1)

C) (1, 0)

B) (0, 0)

D) (1, 1)

(B) (0,0) a proportional graph must pass through the point: (0,0).