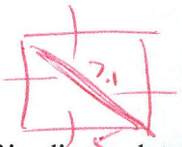
Proportions Review

Lesson 16-19



Ratios (L.16)

1. One side of a square and one of its diagonals measure 5cm and 7.1cm, respectively. Give the ratio of:

a) The measure of one of the square's sides to one of its diagonals. 5:7.1

b) The square's perimeter to the measure of one of its sides. 20:5 4:1

2. In each case, reduce the ratio.

a) $\frac{8}{10} = \frac{4}{5}$

b) $\frac{18}{12} = \frac{9 \div 3}{6 \div 3} \quad \frac{3}{2}$

c) 12:9 = 4:3

d) $\frac{39 \div 13}{52 \div 13} = \frac{3}{4}$

e) 14:21= 2/3

f) 100:45 = $\frac{20}{9}$

3. A rectangular prism has a length L of 10cm, a width W of 8cm and a height h of 6cm. in each case, determine the reduced ratio.

a) $\frac{L}{W} = \frac{10}{8} \quad \frac{5}{4}$

b) $\frac{h}{W} = \frac{6}{8} \quad \frac{3}{4}$

c) $\frac{L}{h} = \frac{10}{6} \quad \frac{5}{3}$

d) $\frac{h}{L} = \frac{6}{10} \quad \frac{3}{5}$

Rate and Unit Rate (L. 16)

1. In each case, ~~write the rate expressed in words using a fraction bar, and then~~ establish the corresponding unit rate.

Rate expressed in words	Unit Rate
$35 for 7kg	$5/1kg
48L in 6 min	8L/1min
777km in 11 days	70.64km/1day
51 pencils in 3 boxes	17p/1box

2. In each case, establish the unit rate.

a) Paying $1,750 for 10 days — $175/1day

b) Travelling 45km in 5h — 9km/1h

c) Scoring 25 goals in 50 games — .5goal/1game or 1goal/2games

d) Covering a distance of 42m in 6 laps — 7m/1lap

Comparing Ratios

Lesson 16-18

1. Compare the two ratios using the appropriate symbol: > , < or =.
   a) 8:15 ☐ 2:5 b) $\frac{3}{9}$ ☐ $\frac{6}{18}$ c) 7:28 ☐ 12:16 d) $\frac{11}{9}$ ☐ $\frac{26}{14}$

Proportional and Inverse (L. 17-18)

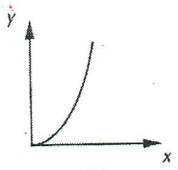
1. Complete the table of values below, which represents a proportional situation.

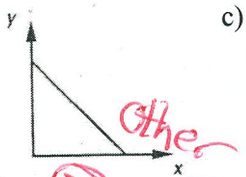
Time (min)	0	3	5	6	8	10
Distance (m)	0	18	30	36	48	60

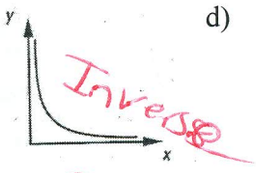
2. Complete the table of values below, which represents an inversely proportional situation.

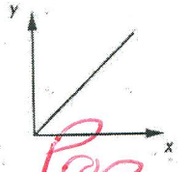
Number of people	1	2	3	5	6	10
Number of sandwiches	60	30	20	12	10	6

3. In each case, indicate what type of situation is being referred to.
   1. Proportional situation
   2. Inversely proportional situation
   3. Other type of situation

a) 

b) 

c) 

d) 

   e) The quantity of salt dissolved in a glass of water and the water's level of salinity.
   f) The time elapsed between a car's time of departure and the distance remaining to reach its destination.
   g) The number of tickets sold for a show and the total cost.

4. In each case, determine the value that helps form a proportion.
   a) 1:2 = 3:☐ d) 2:3 = ☐:6 g) ☐:5 = 12:10
   b) 6:☐ = 12:8 e) $\frac{3}{4} = \frac{\square}{8}$ h) $\frac{4}{7} = \frac{12}{\square}$
   c) $\frac{\square}{9} = \frac{8}{3}$ f) $\frac{35}{\square} = \frac{5}{2}$

Lesson 17-18 16-19

Table of Values

1. Complete the table of values below and indicate, in each case, the type of situation being referred to.

a)

x	0	1	2	3	4	5
y	0	3	6	9	12	15

Prop.

b)

x	1	2	3	4	6	12
y	12	6	4	3	2	1

Inverse

c)

x	0	1	2	3	4	5
y	0	8	16	24	32	40

Prop.

d)

x	1	2	3	4	6	8	12	24
y	24	12	8	6	4	3	2	1

Inverse

2. Determine the proportionality coefficient for each of these tables of values.

a)

x	0	2	4	6	8
y	0	12	24	36	48

6

y/x

b)

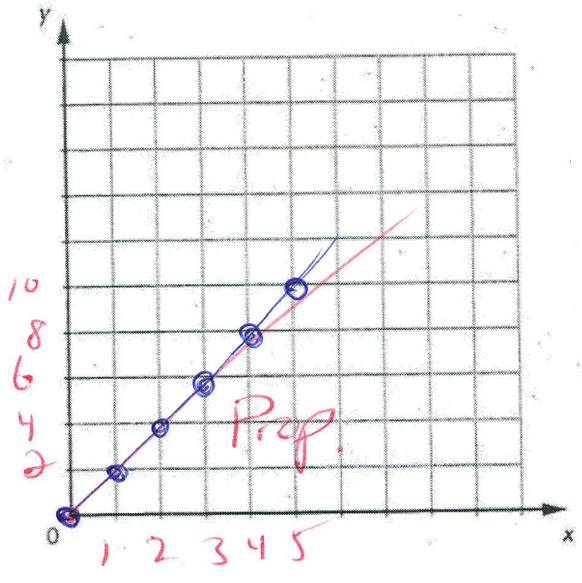
x	0	1	3	5	7
y	0	8	24	40	56

8 y/x

3. In each case, construct the graph and indicate what type of situation is being referred to.

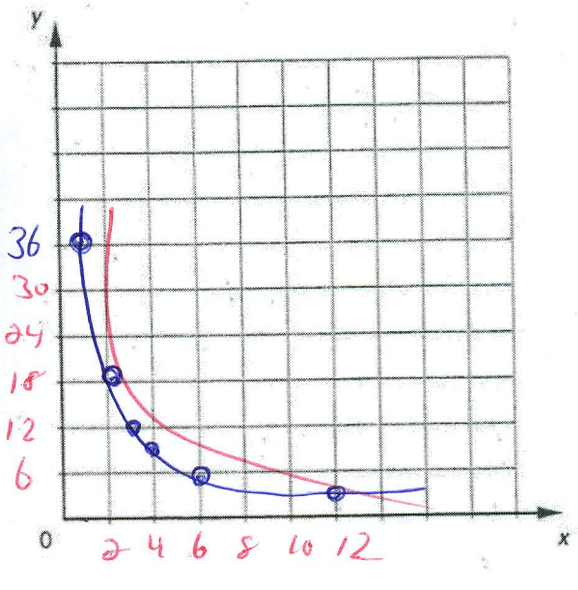
a)

x	0	1	2	3	4	5
y	0	2	4	6	8	10



b)

x	1	2	3	4	6	12
y	36	18	12	9	6	3



Inverse

Table of Values

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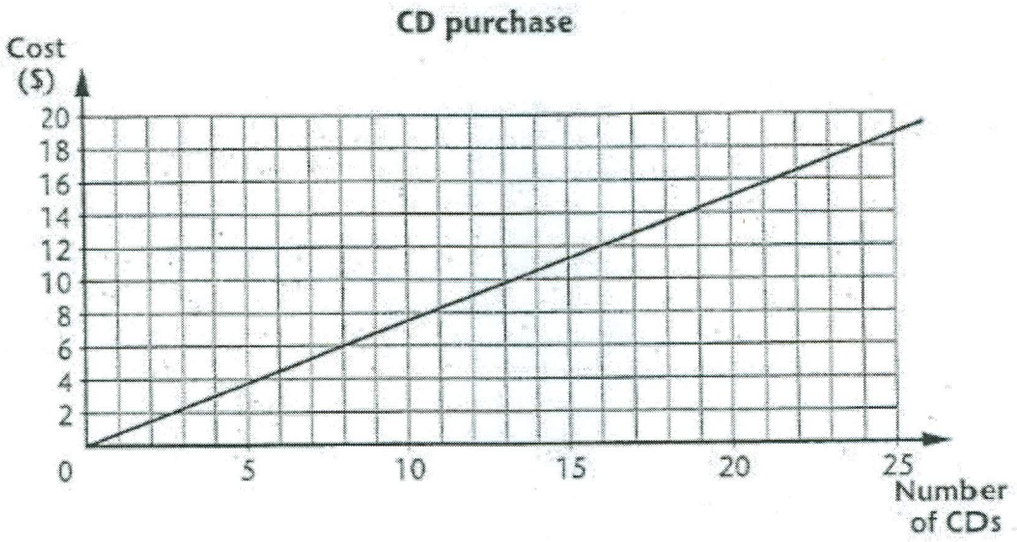
1. The graph below shows a proportional situation.



a) Complete the table of values below.

CD purchase

Number of CDs	0	6	12	18
Cost ($)	0	4.5	9	13.50

b) Determine the unit cost. $\frac{4.5\$}{6\text{ CDs}} = .75 / 1\text{ CD}$.

c) Determine the proportionality coefficient. $\frac{.75}{1} = \frac{y}{x}$

d) What is the total cost for:
1) 43 CDs? $x .75 = \$32.25$
2) 30 CDs? $x .75 = 22.5\$$

e) How many CD's can be bought with:
1) \$27? $\div .75 = 36$
2) \$39? $\div .75 = 52$

Solving Problems

Lesson 16-19

1. In each case, indicate whether it is possible to answer the question using a proportion. Explain your answer.

a) During the first month of its life, a baby grows 2cm to reach a height of 27 cm. What will the baby's height be at 36 months?

No, Growth not

b) A pupil who studies 30 min/day obtains an average of 72% on an exam. What will her average be if she studies 45 min/day?

Not Prop.

c) A battery is completely used up. Charging it for 90 min enables it to regain one quarter of its maximum charge. How long does this battery need to charge in order to be fully charged?

Prop. ✓ $\frac{C\ 90m}{.25C} = \frac{360m}{1}$ 6 hrs.

d) It takes 25 min to travel 4.3 km on a mountain path. If the total length of the path is 22.1 km, how much time will be needed to cover the entire distance?

Prop. ✓ $\frac{25m}{4.3km} = \frac{128.49m.}{22.1km}$

List All the different methods of Solving Prop.