



Many Measures

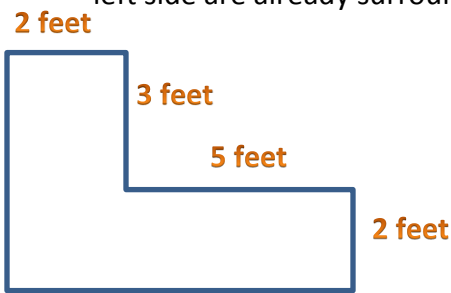
Name: _____

Your family is working on completing several projects this weekend around the house. They need your help to decide how much of each material is needed to complete each project. Use your measurement conversion table from your Math Tools to complete this assignment. **On the back, write and solve two problems of your own.**

1. You are covering your patio with square paving stones. Each stone is 12 inches by 12 inches. How many stones will you need to cover the rectangular patio? What if you choose paving stones which are 18 inches by 18 inches?



2. Your vegetable garden needs a fence to protect it from being trampled by animals. How many **yards** of fencing will you need if you are going to surround the entire garden? What about if the base and the left side are already surrounded by your yard's fence?



3. You are moving your TV and electronics to a different wall in your living room. You need to replace several of the cords to your electronics in order for them to reach the appropriate outlets. Decide how many feet of cord you will need to connect all of the devices. Each device is labeled with the length of cord needed to connect it.

36 inches



27 inches



6 inches

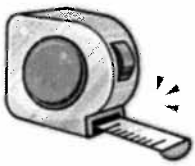


27 inches



36 inches



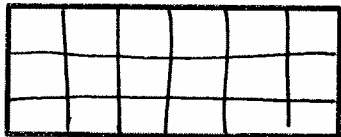


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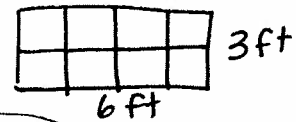
3 feet

6 feet

ft	1	2	3
in	12	24	36

$3 \times 6 = 18$

18 tiles (12x12)



3 ft

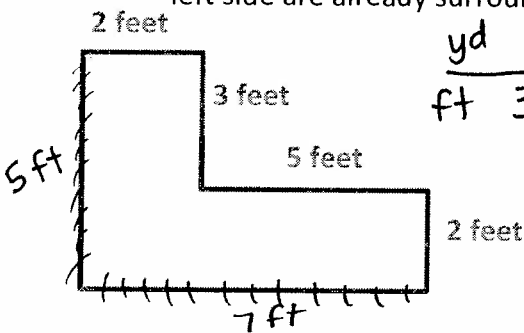
6 ft

Tiles	1	2	3	4
in	18	36	54	72

$2 \times 4 = 8 \text{ tiles (18x18)}$

ft	1	2	3	6
in	12	24	36	72

2. Your vegetable garden needs a fence to protect it from being trampled by animals. How many **yards** of fencing will you need if you are going to surround the entire garden? What about if the base and the left side are already surrounded by your yard's fence?



yd	1	2	3	4	8
ft	3	6	9	12	24

4 yards of fencing (if part is already fenced)
 8 yards of fencing for the whole garden

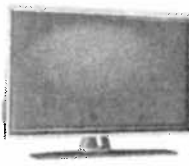
$2 + 3 + 5 + 2 = 12 \text{ feet}$

$12 + 5 + 7 = 24 \text{ feet}$

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36 inches

27 inches



* students might also add all inches first.
 $132 \text{ in.} \div 12 \text{ in.} = 11 \text{ feet}$

6 inches

27 inches

36 inches



3 feet

2.25 feet

0.5 feet

2.25 feet

3 feet

feet	1	2	3	4
inches	12	24	36	48

feet	1	.5	.25	2
in	12	6	3	24

11 feet needed

$$2.25 + 2.25 = 4.5$$

$$4.5 + 0.5 + 3 + 3 = 11 \text{ feet}$$



Party Planning

Name: _____

You are planning a party to celebrate a friend's birthday. You have invited 30 guests. Make sure you have materials to provide *exactly* enough for everyone. This means that you may only rent or order *part* of a package or group. Determine what it will cost in total. ***On the back, write your own party problem.***

Rental and Catering Menu

Party Item	Sold in Packages Of...	Total Packages Needed	Cost Per Package	Total Cost
Tables	Seat 6 people		\$15.00	
Chairs	Groups of 8		\$12.00	
Plates	15		\$2.50	
Forks	20		\$1.40	
Napkins	50		\$1.00	
Chicken	8 piece bucket		\$4.80	
Salad	Serves 4		\$1.60	
Fruit	Serves 5		\$7.00	
Lemonade	Serves 12		\$8.50	
			TOTAL:	



Party Planning

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* Students may need to be encouraged to use ratio tables for some items.

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Rental and Catering Menu

Party Item	Sold in Packages Of...	Total Packages Needed	Cost Per Package	Total Cost
Tables	Seat 6 people	$30 \div 6 = 5$	$5 \times \$15.00$	\$ 75.00
Chairs	Groups of 8	$30/8 = 3.75$	\$12.00	\$ 45.00
Plates	15	$30 \div 15 = 2$	\$2.50	\$ 5.00
Forks	20	$\frac{30}{20} = \frac{15}{10} = 1.5$	\$1.40	\$ 2.10
Napkins	50	$\frac{30}{50} = \frac{3}{5}$	\$1.00	\$ 0.60
Chicken	8 piece bucket	$\frac{30}{8} = 3.75$	\$4.80	\$ 18.00
Salad	Serves 4	$\frac{30}{4} = 7.5$	\$1.60	\$ 12.00
Fruit	Serves 5	$\frac{30}{5} = 6$	\$7.00	\$ 42.00
Lemonade	Serves 12	$\frac{30}{12} = \frac{5}{2} = 2.5$	\$8.50	\$ 21.25
			TOTAL:	\$ 220.95

Chairs

Groups	1	.5	2	3.5
\$	12	6	24	42

Forks

Group	1	.5	1.5
\$	1.40	.70	2.10

Napkins

Groups	1	$\frac{1}{5}$	$\frac{3}{5}$
\$	1.00	.20	.60

Chicken

Groups	1	.5	3	.25	3.75
\$	4.80	2.40	14.40	1.20	18.00

Salad

Groups	1	.5	7
\$	1.60	0.80	11.20

Lemonade

Groups	1	0.5	2	2.5
\$	8.50	4.25	17.00	21.25

* Students might also use ratio tables to solve # of groups needed.

Tables

# people	1	2	3	4	5
	6	12	18	24	30

chairs/chicken

# people	1	2	3	4	.5	.25	.75
	8	16	24	32	4	2	6

+



Scheduling Manager

Name: _____

You are the manager of a lawn care business. You need to schedule your five employees to work for a client. Compare each employee's rates of completion, and assign each employee to the job which is the fastest for them to complete. Each employee must work on one job and only one job. Which employee will work on each job? **On the back, write your own scheduling problem with two employees and two activities for them to complete at different rates.**

Activity	Emily	Jacob	Sammy	Dylan	Maggie
Mow Lawn	3 lawns in 4 hours	2 lawns in 1.5 hours	4 lawns in 5 hours	5 lawns in 5.5 hours	1 lawn in 1 hour
Pull Weeds	2 beds in 30 min.	1 beds in 10 min.	6 beds in 40 min.	2 beds in 22 min.	2 beds in 30 min.
Trim Edges	10 feet in 15 min.	15 feet in 30 min.	2 feet in 2.5 min.	8 feet in 10 min.	12 feet in 18 min.
Trim Bushes	8 bushes in 60 min.	2 bushes in 18 min.	2 bushes in 15 min.	6 bushes in 45 min.	4 bushes in 48 min.
Water Plants	20 plants in 10 min.	10 plants in 8 min.	2 plants in 1 min.	4 plants in 5 min.	20 plants in 10 min.

Determine each employee's **unit rate** of completion and fill in the table below:

Activity	Emily	Jacob	Sammy	Dylan	Maggie
Mow Lawn					1 lawn in 1 hour
Pull Weeds	1 bed in 15 min.	1 bed in 10 min.			
Trim Edges				1 ft. in 1.25 min.	
Trim Bushes		1 bush in 9 min.		1 bush in 7.5 min.	
Water Plants			2 plants in 1 min.		1 plant in 0.5 min.



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Determine each employee's unit rate of completion and fill in the table below:

Activity	Emily	Jacob	Sammy	Dylan	Maggie
Mow Lawn <small>lawns hrs</small>	$\frac{3}{4} \mid \frac{1}{3} \mid \frac{1}{3}$	$\frac{2}{1.5} \mid \frac{1}{0.75} \text{ hrs}$	$\frac{4}{5} \mid \frac{2}{2.5} \mid \frac{1}{1.25} \text{ hrs}$	$\frac{5}{5.5} \mid \frac{1}{1.1} \text{ hrs.}$	1 lawn in 1 hour
Pull Weeds	1 bed in 15 min.	1 bed in 10 min.	$\frac{6}{40} \mid \frac{3}{20} \mid \frac{1}{6\frac{2}{3}} \text{ min}$	$\frac{2}{22} \mid \frac{1}{11} \text{ min.}$	$\frac{2}{30} \mid \frac{1}{15}$
Trim Edges <small>feet min</small>	$\frac{10}{15} \mid \frac{2}{3} \mid \frac{1}{\frac{3}{2}} \mid \frac{1}{15}$	$\frac{15}{30} \mid \frac{1}{2} \text{ min.}$	$\frac{2}{2.5} \mid \frac{1}{1.25} \text{ min.}$	1 ft. in 1.25 min. ★	$\frac{12}{18} \mid \frac{2}{3} \mid \frac{1}{\frac{3}{2}} \mid \frac{1}{1.5} \text{ min}$
Trim Bushes <small>bushes min</small>	$\frac{8}{60} \mid \frac{2}{15} \mid \frac{1}{7.5} \text{★}$	1 bush in 9 min.	$\frac{2}{15} \mid \frac{1}{7.5} \text{ min.}$	1 bush in 7.5 min.	$\frac{4}{48} \mid \frac{1}{12}$
Water Plants <small>plants min</small>	$\frac{20}{10} \mid \frac{2}{1} \mid \frac{1}{0.5}$	$\frac{10}{8} \mid \frac{5}{4} \mid \frac{1}{\frac{4}{5}} \text{ min}$	2 plants in 1 min.	$\frac{4}{5} \mid \frac{1}{1.25} \text{ min}$	1 plant in 0.5 min. ★

Jacob - mow lawn
Maggie - water plants
Sammy - Pull weeds

Dylan - Trim Edges
Emily - Trim bushes
* Students must use logic to decide jobs. This may require scaffolding for some students.