



STUDENT _____ GROUP _____

INSTRUCTOR _____ DATE _____

Math Lab Lesson #6 Classwork:

Proportions

★ Video#1: Introduction to Proportions

NOTES:

★ **Example:** At a store you can buy 8 cookies for \$20.

How many cookies can you buy for \$10 ?



→ 1. Complete the proportions by solving for x . **Do it without cross multiplying.**

a) $\frac{3}{5} = \frac{x}{10}$

b) $\frac{7}{2} = \frac{21}{x}$

c) $\frac{5}{9} = \frac{x}{81}$

d) $\frac{5}{9} = \frac{x}{81}$

*e) $\frac{2}{4} = \frac{3x}{12}$



2. Next to each of the expressions or equations, choose whether you would:

- a) CROSS MULTIPLY
- b) KEEP CHANGE FLIP
- c) MULTIPLY ACROSS

You do not need to solve the problems, just show what you would do.

$\left(\frac{2}{3}\right)\left(\frac{x}{6}\right)$	$\frac{1}{10} \div \frac{2}{5}$
$\frac{2}{3} = \frac{x}{6}$	$\left(\frac{1}{10}\right)\left(\frac{2}{5}\right)$
$\frac{\left(\frac{2}{3}\right)}{\left(\frac{x}{6}\right)}$	$\frac{5}{10} = \frac{x}{2}$



★ Video#2: Equivalent Fractions

HOW TO CHECK IF A PROPORTION IS TRUE:

NOTES:



→ 1. Check to see if the proportions below are true or not.

$\frac{3}{5} = \frac{3+2}{5+2}$	$\frac{3}{5} = \frac{3(2)}{5(2)}$
$\frac{3}{5} = \frac{30}{50}$	$\frac{3}{5} = \frac{5}{3}$

2. a) Create a true proportion with the numbers 6, 11, and 3

b) Create another one.

c) Create another one.



★ Video#3: Proportional Word Problems

★ **Example:** Theo is learning to talk. Out of every 40 noises that he makes, 3 of them are words. At this rate, how many words will he say if he makes 2,000 noises?

★ **Example:** A famous monkey lives in a zoo. The number of bananas the monkey gets is directly proportional to the number of people who visit the zoo. The monkey gets 42 bananas when 600 people visited the zoo. How many bananas will the monkey get when 500 people visit the zoo?

★ **Example:** A 30-foot tree casts a 12-foot long shadow. As Brianna walks past this tree, she notices that she casts a 2-foot long shadow. How tall is Brianna?



→ 1. The amount of money a performer makes is directly proportional to the number of people attending the performance. The performer earns \$72 at a performance where 9 people attended. How much money will the performer earn when 4 people attend a performance?

2. A quality control manager at a peanut processing plant selects 3 peanuts at random for inspection out of every 400 peanuts. At this rate, how many peanuts will be inspected if the plant packs 20,000 peanuts?

3. A tree casts a 48-foot long shadow. As Brianna walks past this tree, she notices that she casts a 4-foot long shadow. She is about 5 feet tall. How tall is the tree?



★ **Video#4: Proportions and Estimation**

★ **Example:** Chloe walks 29.3 feet in 9.82 seconds. If she walks at this same rate, approximately how long will she walk in 2 minutes? (60 seconds = 1 minute)

➡ 1. Amber walks 39.2 feet in 44.7 seconds. After 3 minutes, approximately how long has she walked?

2. Katie walks 40.3 feet in 30.1 seconds. Who is faster: Amber or Katie?