

## 8<sup>th</sup> Grade Assignment – Week #16

### Group Assignments:

- 1) Together, look through the problems in the Percents Review Sheets (given on the next pages), choose the problems that are confusing or difficult, and help each other to understand it.
- 2) *Puzzle!* Shaking Hands  
At a convention, every person shakes hands once with every other person. If there were a total of 120 hand-shakes, how many people must there have been?

### Individual Work

- *Mensuration Test.* The test is on the next page. Take it by the end of this week, and then send it to your tutor.
- *Percents Review Sheets* (given on the next pages)  
Complete whatever problems on these sheets that you didn't do in your groupwork sessions. Keep in mind that it is very important to fully understand the problems on these sheets before we move into the new material in the *Percents and Growth* unit in the 8<sup>th</sup> grade workbook.
- *Flashcards!* These flashcards (see the below pages) include all the percent facts that were in the table I created in today's lecture. As needed, practice these flashcards daily until you really know these important facts.

# Mensuration – Test

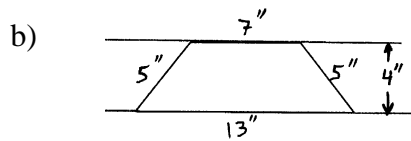
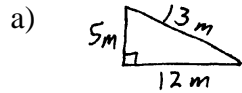
Name: \_\_\_\_\_

Heron's formula is  $A = \sqrt{s(s-a)(s-b)(s-c)}$

All problems on this side are worth 4 points!  
Calculators are not allowed. You may leave answers either as approximate decimals, or in terms of a square root, or  $\pi$ .

You may use the tables at the back of the workbook, but may not use any notes.

1) Find the area of each one:

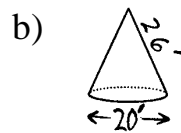
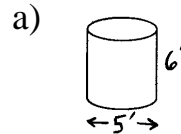


2) What is the volume of a sphere with a radius of 3 m.

3) How many  $\text{in}^2$  are in a  $\text{ft}^2$ ?

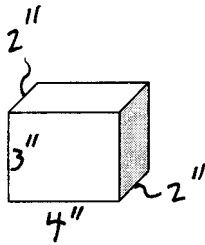
How many  $\text{in}^3$  are in a  $\text{ft}^3$ ?

4) Find the volume of...

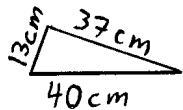


All problems on this side are worth 2 points!

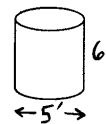
5) Find the surface area:



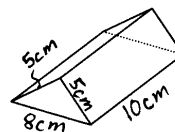
6) Find the volume of an irregular tetrahedron (which is a pyramid with a triangular base) that has a height of 2 meters, and a triangular base as shown below.



7) Find the surface area:



8) Find the volume:



# Percents – Review Sheet #1

## Do #1 to #6 in your head!

1) Convert to a percent.

a)  $\frac{3}{4}$

b)  $\frac{7}{10}$

c)  $\frac{1}{3}$

d)  $\frac{3}{20}$

e)  $\frac{5}{6}$

f) 0.53

g) 0.06

h) 0.045

i) 1.16

2) Convert to a fraction.

a) 40%

b)  $66\frac{2}{3}\%$

c) 13%

d)  $37\frac{1}{2}\%$

3) Convert to a decimal.

a) 53%

b) 9%

c) 90%

d) 14.37%

4) What is...

a) 10% of 52?

b) 1% of 6000?

c) 50% of 8?

d) 100% of 83.48?

e) 20% of 15?

f) 1% of 463?

g)  $62\frac{1}{2}\%$  of 2400?

h)  $83\frac{1}{3}\%$  of 360?

5) a) 6 is what percent of 12?

b) 4 is what percent of 12?

c) 300 is what percent of 500?

d) 7 is what percent of 700?

e) 10 is what percent of 12?

f) 60 is what percent of 90?

g) 28 is what percent of 35?

6) Quickly Estimate.

a) What is 52% of 238?

b) What is 23% of 37?

c) 52 is what percent of 160?

d) \$7.20 is what percent of \$697?

7) Increase/decrease problems.

a) What is 72000 decreased by  $62\frac{1}{2}\%$ ?

b) What is 400 increased by 60%?

c) 600 to 800 is what percentage increase?

d) 800 to 600 is what percentage decrease?

e) Why weren't the above two answers the same?

## Percents – Review Sheet #2

1) Find each answer by using the easiest method possible. Show work on a separate sheet for those problems that can't be done in your head.

- a) What is 25% of 140?
- b) What is 80% of 450?
- c) What is 15% of 220?
- d) What is 1% of 741?
- e) What is  $33\frac{1}{3}\%$  of 1200?
- f) What is  $83\frac{1}{3}\%$  of 12,000?
- g) What is 160% of 25?
- h) What is 0.02% of 3000?
- i) 8 is what percent of 16?
- j) 8 is what percent of 160?
- k) 70 is what percent of 210?
- l) 31 is what percent of 310?
- m) 14 is what percent of 150?
- n) 14 is what percent of 16?

2) What do you end up with if you increase 55 by 40%, and then decrease that result by 40%?

3) Increase and decrease.

a) Going from 5200 up to 6500 is what percentage increase?

b) Going from 6500 down to 5200 is what percentage decrease?

c) Why were the answers to the above two problems different?

4) Jen paid \$213 for a tent that was priced at \$200. What was the tax rate as a percent?

5) John bought a shirt at a 40% discount that was originally marked at \$45. What was the price after the discount?

6) What is ...

a) 72 increased by 2%?

b) 240 decreased by  $33\frac{1}{3}\%$ ?

c) 5 increased by 60%?

d) 610 decreased by 4.3%?

7) Increase and decrease.

a) Going from 80 up to 90 is what percentage increase?

b) Going from 400 down to 325 is what percentage decrease?

8) A bike, originally priced at \$480, was sold at a discount for \$345.60. What was the percentage discount rate?

# Answers

## Review Sheet #1

- 1) a) 75%  
b) 70%  
c)  $33\frac{1}{3}\%$   
d) 15%  
e)  $83\frac{1}{3}\%$   
f) 53%  
g) 6%  
h) 4.5%  
i) 116%
- 2) a)  $\frac{2}{5}$   
b)  $\frac{2}{3}$   
c)  $\frac{13}{100}$   
d)  $\frac{3}{8}$
- 3) a) 0.53  
b) 0.09  
c) 0.9  
d) 0.1437
- 4) a) 5.2  
b) 60  
c) 4  
d) 83.48  
e) 3  
f) 4.63  
g) 1500  
h) 300
- 5) a) 50%  
b)  $33\frac{1}{3}\%$   
c) 60%  
d) 1%  
e)  $83\frac{1}{3}\%$   
f)  $66\frac{2}{3}\%$   
g) 80%
- 6) a) around 120  
b) around 9  
c) around 32%  
d) around 1.1%
- 7) a) 27,000  
b) 640  
c)  $33\frac{1}{3}\%$   
d) 25%  
e) Each one starts from a different place.

## Review Sheet #2

- 1) a) 35  
b) 360  
c) 33  
d) 7.41  
e) 400  
f) 10,000  
g) 40  
h) 0.6  
i) 50%  
j) 5%  
k)  $33\frac{1}{3}\%$   
l) 10%  
m) 9.3% or  $9\frac{1}{3}\%$   
n)  $87\frac{1}{2}\%$
- 2) 46.2
- 3) a) 25%  
b) 20%  
c) They start at different places.
- 4) 6.5%
- 5) \$27
- 6) a) 73.44  
b) 160  
c) 8  
d) 583.77
- 7) a)  $12\frac{1}{2}\%$   
b)  $18\frac{3}{4}\%$
- 8) 28%

## Percents to Fraction Conversion Flashcards

1%

25%

$16\frac{2}{3}\%$

10%

75%

$83\frac{1}{3}\%$

30%

20%

$12\frac{1}{2}\%$

70%

40%

$37\frac{1}{2}\%$

$33\frac{1}{3}\%$

60%

$62\frac{1}{2}\%$

$66\frac{2}{3}\%$

80%

$87\frac{1}{2}\%$