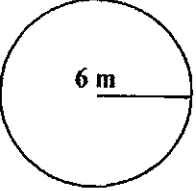
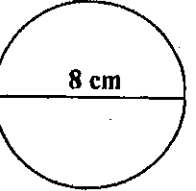
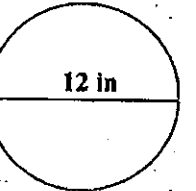
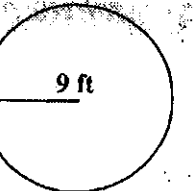
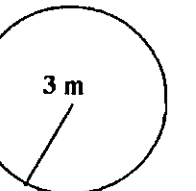


Semester 2

Benchmark Review

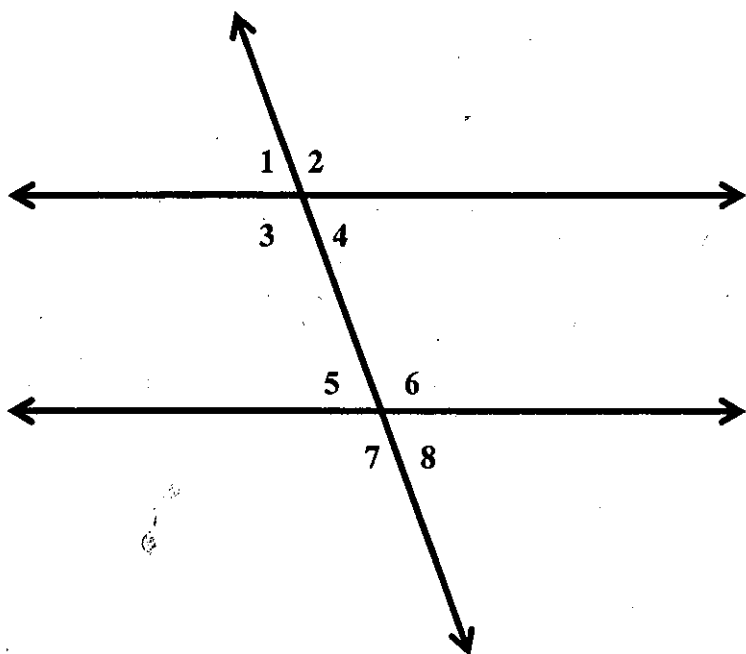
Name Answer Key

Sheet F42/43 Show work!! $\pi = 3.14$

	$r = \underline{6}$ $d = \underline{12}$	$C = \pi \cdot d$ $C = 3.14(12)$ $C = \underline{37.68m}$	$A = \pi \cdot r \cdot r$ $A = 3.14(6)(6)$ $A = 113.04$ $A = \underline{113.04m^2}$
	$r = \underline{4}$ $d = \underline{8}$	$C = \pi \cdot d$ $C = 3.14(8)$ $C = \underline{25.12}$	$A = \pi \cdot r \cdot r$ $A = 3.14(4)(4)$ $A = \underline{50.24cm^2}$
	$r = \underline{6}$ $d = \underline{12}$	$C = \pi \cdot d$ $C = 3.14(12)$ $C = \underline{37.68in}$	$A = \pi \cdot r \cdot r$ $A = 3.14(6)(6)$ $A = \underline{113.04in^2}$
	$r = \underline{9}$ $d = \underline{18}$	$C = \pi \cdot d$ $C = 3.14(18)$ $C = \underline{56.52ft}$	$A = \pi \cdot r \cdot r$ $A = 3.14(9)(9)$ $A =$ $A = \underline{254.34}$
	$r = \underline{3}$ $d = \underline{6}$	$C = \pi \cdot d$ $C = 3.14(6)$ $C = \underline{18.84m}$	$A = \pi \cdot r \cdot r$ $A = 3.14(3)(3)$ $A =$ $A = \underline{28.26m^2}$

Name _____

Benchmark review



- A. Supplementary
- B. Complimentary
- C. Alternate interior
- D. Alternate exterior
- E. Vertical
- F. corresponding

$\angle 1$ is alternate exterior to $\angle 8$

$\angle 7$ is alternate exterior to $\angle 2$

$\angle 6$ is alternate interior to $\angle 3$

$\angle 4$ is alternate interior to $\angle 5$

$\angle 6$ is corresponding to $\angle 2$

$\angle 1$ is vertical to $\angle 4$

$\angle 7$ is corresponding to $\angle 3$

$\angle 2$ is corresponding to $\angle 6$

$\angle 8$ is vertical to $\angle 5$

The $m\angle 1$ is 48° .. What is $m\angle 8$? 48° . Why? D

The $m\angle 5$ is 59° .. What is $m\angle 4$? 59° . Why? C

The $m\angle 2$ is 110° .. What is $m\angle 7$? 110° . Why? D

The $m\angle 8$ is 37° .. What is $m\angle 5$? 37° . Why? E

The $m\angle 6$ is 105° .. What is $m\angle 3$? 105° . Why? C

The $m\angle 1$ is 44° .. What is $m\angle 2$? 136° . Why? A
($180-44$)

Over

1. If two angles are supplementary, and one is 117 degrees, what is the measure of the other angle?

63°

$$\begin{array}{r} 180 \\ -117 \\ \hline 63 \end{array}$$

2. If two angles are complementary, and one is 24 degrees, what is the measure of the other angle?

66°

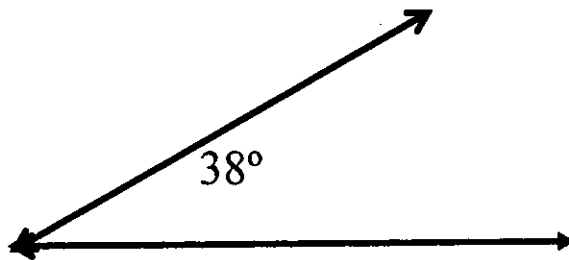
$$\begin{array}{r} 90 \\ -24 \\ \hline 66 \end{array}$$

3. If two angles are supplementary, and one is 94 degrees, what is the measure of the other angle?

86°

$$\begin{array}{r} 180 \\ -94 \\ \hline 86 \end{array}$$

4. If two angles are complementary. One is shown here. What is the measure of the other?



$$\begin{array}{r} 90 \\ -38 \\ \hline 52 \end{array}$$

52°

FIND THE TAX OR DISCOUNT.

FIRST: $\frac{x}{\text{price}} = \frac{\%}{100}$ cross multiply then divide.

Find the amount of tax.

1. \$46 shoes ; 2.9% tax

$$\frac{x}{46} = \frac{2.9}{100}$$

$$\frac{100x}{100} = \frac{133.4}{100}$$

$$x = \$1.33$$

2. \$1,500 computer ; 7% tax

$$\frac{x}{1500} = \frac{7}{100}$$

$$\frac{100x}{100} = \frac{10,500}{100}$$

$$x = 105$$

$$\$105.00$$

3. \$99 MP3 player ; 5% tax

$$\frac{x}{99} = \frac{5}{100}$$

$$\frac{100x}{100} = \frac{495}{100}$$

$$x = 4.95$$

$$\$4.95$$

4. \$7.50 meal ; 6.5% tax

$$\frac{x}{7.50} = \frac{6.5}{100}$$

$$\frac{100x}{100} = \frac{48.75}{100}$$

$$x = .4875$$

$$\$0.49$$

FIRST: $\frac{x}{\text{price}} = \frac{\%}{100}$ cross multiply then divide.

Find the amount of discount.

5. \$90 roller blades ; 9% discount

$$\frac{x}{90} = \frac{9}{100}$$

$$\frac{100x}{100} = \frac{810}{100}$$

$$x = 8.1$$

$$\$8.10$$

7. \$42 sweater ; 33% discount

$$\frac{x}{42} = \frac{33}{100}$$

$$\frac{100x}{100} = \frac{1,386}{100}$$

$$x = 13.86$$

$$\$13.86$$

8. \$12.25 iTunes album ; 60% discount

$$\frac{x}{12.25} = \frac{60}{100}$$

$$\frac{100x}{100} = \frac{735}{100}$$

$$x = 7.35$$

$$\$7.35$$

9. \$126 cell phone ; 30% discount

$$\frac{x}{126} = \frac{30}{100}$$

$$\frac{100x}{100} = \frac{3780}{100}$$

$$x = 37.8$$

$$\$37.80$$

Foundations Review sheet - interest

Name _____ Date _____ Period _____

USE CALCULATOR

FIND THE INTEREST EARNED TO THE NEAREST CENT

$$I = prt$$

- make sure you change % to decimal
- multiply all three numbers
- label with \$

Find the interest earned given each principal, interest rate, and time.

\$6300 ; 6% ; 2 years $6\% \rightarrow .06$

$$I = prt$$

$$I = (6300)(.06)(2)$$

$$I = 756$$

$$I = \$756.00$$

\$900 ; 18% ; 3 years $18\% = .18$

$$I = prt$$

$$I = (900)(.18)(3)$$

$$I = 486$$

$$I = \$486.00$$

\$4200 ; 5.4% ; 3 years $5.4\% = .054$

$$I = prt$$

$$I = (4200)(.054)(3)$$

$$I = \$680.40$$

$$I = \$680.40$$

\$5000 ; 7.2% ; 4 years $7.2\% = .072$

$$I = prt$$

$$I = (5000)(.072)(4)$$

$$I = 1440$$

$$I = \$1,440.00$$

\$725 ; 6.25% ; 1 year $6.25\% = .0625$

$$I = prt$$

$$I = (725)(.0625)(1)$$

$$I = 45.3125$$

$$I = \$45.31$$

Math Review sheet – Fraction, decimal, percent

Name _____ Date _____ Period _____

Fraction – Decimal ...set equal to x over 10 or 100; solve for x

Percent to fraction – put # over 100 and reduce

P to D or D to P – move decimal point 2 times left or right (ABC)

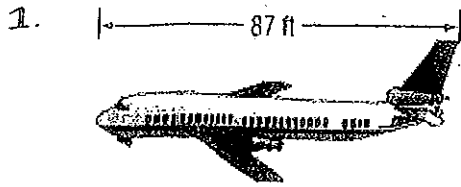
Convert between fractions, decimals, and percents by completing the chart.

Fraction	Decimal	Percent
$\frac{2}{5}$	.4	40%
$\frac{40}{100} = \frac{4}{10} = \frac{2}{5}$	0.4	40%
$\frac{1}{5} \times 2 = \frac{2}{10}$	.2	20%
$\frac{22}{100} \div 2 = \frac{11}{50}$	.22	22%
$\frac{3}{5} \times 2 = \frac{6}{10}$	.6	60%
$\frac{62}{100} \div 2 = \frac{31}{50}$	0.62	62%
$\frac{71}{100}$	.71	71%

Foundations review sheet – scale drawings and similar figures

Name _____

Use each figure to answer the following questions.



A scale drawing is made of this airplane using a scale of 2 in. = 15 ft. What is the length of the drawing?

$$\frac{2 \text{ in}}{15 \text{ ft}} = \frac{x \text{ in}}{87 \text{ ft}}$$

$$\frac{15x}{15} = \frac{174}{15}$$

$$x = 11.6 \text{ in}$$



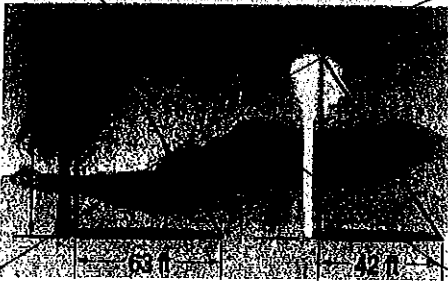
A blueprint drawing of this Ferris wheel is made using a scale of 0.5 cm = 1.5 m. What is the height of the drawing?

$$\frac{0.5 \text{ cm}}{1.5 \text{ m}} = \frac{x \text{ cm}}{36 \text{ m}}$$

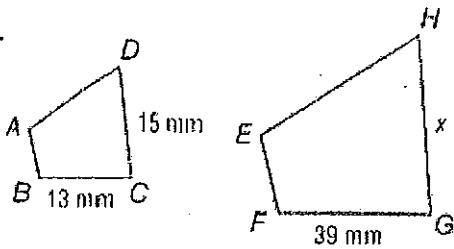
$$\frac{1.5x}{1.5} = \frac{18}{1.5}$$

$$x = 12 \text{ cm}$$

3. Set up and solve a proportion for:



4. Set up a proportion for:



$$\frac{x}{15} = \frac{39}{13}$$

$$\frac{13x}{13} = \frac{585}{13}$$

$$x = 45 \text{ m}$$

$$\begin{array}{r} 439 \\ 15 \\ \hline 195 \\ 390 \\ \hline 585 \end{array}$$

$$\begin{array}{r} 45 \\ 13 \overline{) 585} \\ \underline{-52} \\ 65 \\ \underline{-65} \\ 0 \end{array}$$

$$\begin{array}{r} 13 \\ 52 \end{array}$$

$$\begin{array}{r} 13 \\ 5 \\ \hline 65 \end{array}$$

Foundations review – outcomes and probability

Name _____ Date _____ Period _____

Give the total number of outcomes for each situation.

1. You choose from 4 flavors of ice cream, 3 cones, and 8 toppings.

$$\begin{matrix} 4 & \times & 3 & \times & 8 \\ F & \times & C & \times & T \end{matrix} = \boxed{96}$$

2. At dinner you may choose one appetizer, one entrée and one dessert. Appetizer choices are soup or salad, entrée choices are chicken, beef, or pork, and dessert options are cheesecake, brownie sundae, or apple pie.

$$\begin{matrix} 2 & \times & 3 & \times & 3 \\ A & \times & E & \times & D \end{matrix} = \boxed{18}$$

Use the following scenario to answer the questions below.

A number cube is rolled 50 times. The results are shown in the table.

RESULT	FREQUENCY
1	8
2	12
3	5
4	9
5	15
6	1

3. Find the experimental probability of the cube landing on 2.

$$\frac{12}{50} \div 2 = \frac{6}{25}$$

4. Find the theoretical probability of the cube landing on 2.

$$\frac{1}{6}$$

Use the following scenario to answer the questions below.

A coin is tossed 100 times and lands on tails 60 times.

5. Find the experimental probability of the coin landing on tails.

$$\frac{60}{100} \div 10 = \frac{6}{10} \div 2 = \frac{3}{5}$$

6. Find the theoretical probability of the coin landing on tails.

$$\frac{1}{2}$$

You have a set of cards numbered from 1-24. Suppose you pick a card at random without looking. Find the probability of each event. (Write as a fraction in simplest form)

7. P (even number)

$$\frac{12}{24} = \frac{1}{2}$$

8. P (greater than or equal to 21)

$$21, 22, 23, 24 \quad \frac{4}{24} \div 4 = \frac{1}{6}$$

9. P (2, 5, or 8)

$$\frac{3}{24} \div 3 = \frac{1}{8}$$

Use the Fundamental Counting Principle to find the total number of outcomes in each situation.

10. tossing a penny, a nickel, and a dime

$$2 \times 2 \times 2 = \boxed{8}$$

11. spinning a spinner with the numbers 1-4 and rolling a number cube

$$4 \times 6 = \boxed{24}$$

10. the total number of shirts made in 5 days if 20 employees each make 10 shirts per day

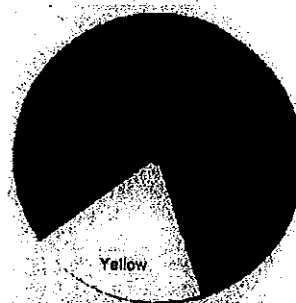
$$5 \times 20 \times 10 = \boxed{1,000}$$

A number cube is rolled and a spinner is spun. Find each probability.

11. P (odd number and red)

$$\frac{1}{2} \times \frac{1}{2}$$

12. P (5 and yellow)



$$\boxed{?}$$

Foundations Review ratios, rate of change

Name _____ Date _____ Period _____

Are the following ratios equivalent? (Yes or No)

1. \$5 for 20 ounces ; \$8 for 32 ounces

$$\frac{1}{4} \frac{5}{20} = \frac{8}{32} = \frac{1}{4} \quad \frac{1}{4} = \frac{1}{4} \rightarrow \text{YES}$$

2. 48 students to 2 teachers ; 100 students to 4 teachers

$$24 = \frac{48}{2} \quad \frac{100}{4} = 25 \quad 24 \neq 25 \rightarrow \text{NO}$$

3. 32 hits out of 93 at bats ; 11 hits out of 31 at bats

$$\frac{32}{93} \quad \frac{11}{31} \quad \frac{32}{93} \neq \frac{11}{31} \rightarrow \text{NO}$$

4. 3 lifeguards to 20 swimmers ; 9 lifeguards to 60 swimmers

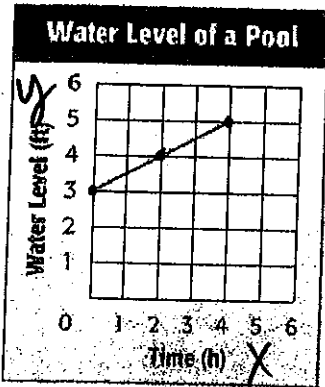
$$\frac{3}{20} \quad \frac{9}{60} \div 3 = \frac{3}{20} \quad \frac{3}{20} = \frac{3}{20} \rightarrow \text{YES}$$

5. 12 out of 20 doctors agree ; 6 out of 10 doctors agree

$$\frac{3}{5} \quad \frac{6}{10} \div 2 = \frac{3}{5} \quad \frac{3}{5} = \frac{3}{5} \rightarrow \text{YES}$$

Find the rate of change for each.

6.



14. \checkmark
 \times

Amount (\$)	30	60	90
Weeks	1	2	3

$$\frac{\Delta y}{\Delta x} = \frac{60 - 30}{2 - 1} = \frac{30}{1}$$

\$30 per week

X	Y
0	3
2	4
4	5

$$\frac{\Delta y (\text{ft})}{\Delta x (\text{hr})} = \frac{4 - 3}{2 - 0} = \frac{1}{2}$$

1 ft per hour

Foundations Review proportions

Name _____ Date _____ Period _____

1. Set up and solve proportion for: On a map, 1 in = 225 miles. How many inches would you use to show 900 miles?

$$\frac{1 \text{ in}}{225 \text{ mi.}} = \frac{x \text{ in}}{900 \text{ mi.}}$$

$$\frac{\cancel{225} \times}{\cancel{225}} = \frac{900}{225}$$

$$\underline{\underline{x = 4 \text{ inches}}}$$

2. Set up a proportion for: A gorilla's diet consists of approximately 67% fruit. If a gorilla eats about 33.5 pounds of fruit each day, how many pounds of food does he eat in one day?

$$\frac{\text{part}}{\text{whole}} = \frac{\%}{100}$$

$$\frac{33.5}{x} = \frac{67}{100}$$

$$\frac{\cancel{67} x = 3500}{\cancel{67} \quad 67}$$

$$\underline{\underline{x = 50 \text{ lbs}}}$$

~~3. Solve the proportion from #3.~~

4. Set up a proportion for: A coat sells for \$130. It is on sale with a 30% discount. How much is the discount?

$$\frac{x}{130} = \frac{30}{100}$$

$$\frac{\cancel{100} x = 3900}{\cancel{100} \quad 100}$$

$$x = 39$$

\$39.00 discount

~~5. Solve the proportion from #5.~~

6. Set up a proportion for: g is 60% of 80

$$\frac{x}{80} = \frac{60}{100}$$

$$\frac{\cancel{100} x = 4800}{\cancel{100} \quad 100}$$

$$x = 48$$

g = 48

~~7. Solve the proportion from #7.~~

8. Set up a proportion for: 12% of m is 36

$$\frac{\%}{\text{of}} = \frac{\%}{100}$$

$$\frac{36}{m} = \frac{12}{100}$$

$$\frac{\cancel{12} m = 3600}{\cancel{12} \quad 12}$$

~~9. Solve the proportion from #9.~~

m = 300