

Fractions

Multiply. Change mixed numbers to improper fractions first. Cross-cancel if possible. Simplify all answers.

1) $3\frac{1}{3} * 3\frac{1}{5}$

2) $4\frac{3}{4} * 2\frac{4}{5}$

3) $3\frac{1}{5} * 3\frac{1}{2}$

4) $2\frac{1}{4} * 4\frac{1}{3}$

Probability

5)

If event M can occur in m ways and is followed by event N that can occur in n ways, then the event M followed by N can occur in $m \times n$ ways. This is called the **Fundamental Counting Principle**.

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

a) rolling two 6-sided number cubes _____

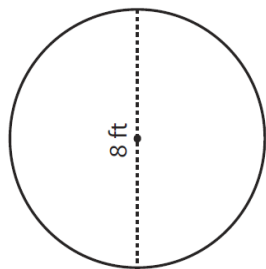
b) tossing 3 coins _____

c) picking one consonant and one vowel from the alphabet _____

Geometry

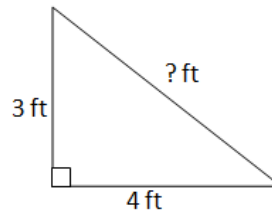
For each shape, find the **perimeter** or **circumference**. Show all work. Use 3 for π .

6)



Formula: _____

7)



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

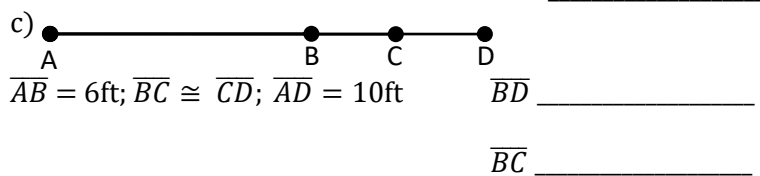
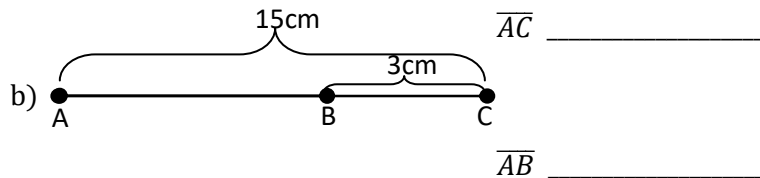
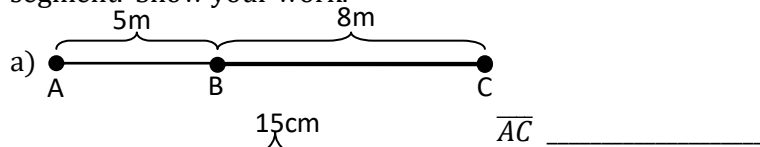
factor pairs

8) 193

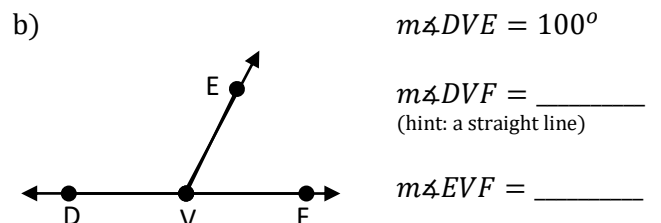
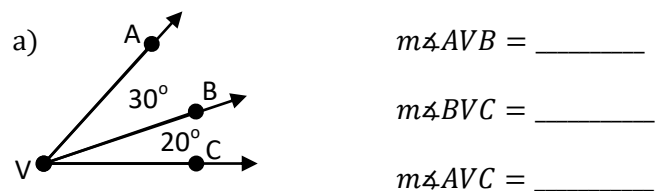
9) 194

Current Problem Sets

10) For each diagram, find the length of the missing segment. Show your work.



11) For the diagrams, find the measurement of the angles requested. Show your work as needed.



Fractions

Multiply. Change mixed numbers to improper fractions first. Cross-cancel if possible. Simplify all answers.

1) $4\frac{1}{3} * 4\frac{1}{2}$

2) $3\frac{1}{10} * 2\frac{4}{5}$

3) $4\frac{2}{3} * 3\frac{9}{10}$

4) $2\frac{1}{2} * 3\frac{1}{10}$

Probability

5)

If event *M* can occur in *m* ways and is followed by event *N* that can occur in *n* ways, then the event *M* followed by *N* can occur in $m \times n$ ways. This is called the **Fundamental Counting Principle**.

Use the Fundamental Counting Principal to find the total number of outcomes in each situation. Show your work.

a) choosing one of 3 processor speeds, 2 sizes of memory, and 4 sizes of hard drive _____

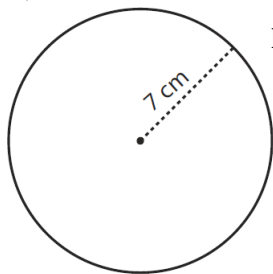
b) choosing a 4-, 6-, or 8-cylinder engine and 2- or 4-wheel drive _____

c) rolling 2 number cubes and tossing 2 coins _____

Geometry

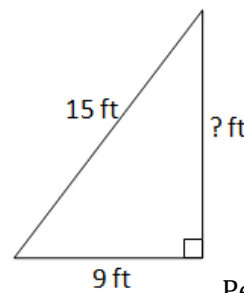
For each shape, find the **perimeter** or **circumference**. Show all work.

6)



Formula: _____

7)



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

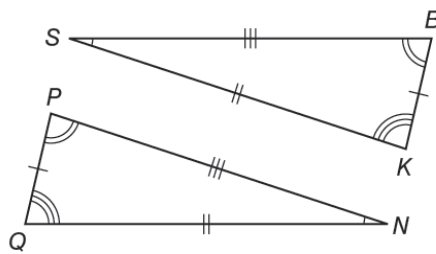
factor pairs

10) 195

11) 196

Current Problem Sets

12) Complete the congruence statements.



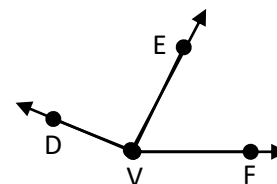
$\angle S \cong$ _____ $\overline{KB} \cong$ _____

$\angle B \cong$ _____ $\overline{KS} \cong$ _____

$\angle K \cong$ _____ $\overline{SB} \cong$ _____

$\triangle KBS \cong$ _____

13) For the diagram, find the measurement of the angle requested. Show your work as needed.



$m\angle DVF = 160^\circ$

$m\angle DVE = 85^\circ$

$m\angle EVF =$ _____

14) Complete each congruence statement if $\triangle MRU \cong \triangle ACF$.

$\angle R \cong$ _____

$\overline{CA} \cong$ _____

$\overline{MU} \cong$ _____

$\angle A \cong$ _____

Fractions

Multiply. Change mixed numbers to improper fractions first. Cross-cancel if possible. Simplify all answers.

1) $2\frac{1}{2} * 4\frac{2}{3}$

2) $2\frac{1}{4} * 3\frac{1}{5}$

3) $2\frac{7}{10} * 3\frac{1}{5}$

4) $3\frac{3}{4} * 2\frac{4}{5}$

Probability

5)

If event *M* can occur in *m* ways and is followed by event *N* that can occur in *n* ways, then the event *M* followed by *N* can occur in $m \times n$ ways. This is called the **Fundamental Counting Principle**.

Use the Fundamental Counting Principal to find the total number of outcomes in each situation. Show your work.

a) picking from 3 theme parks and 1-day, 2-day, 3-day, and 5-day passes _____

b) tossing 3 coins and rolling 2 number cubes _____

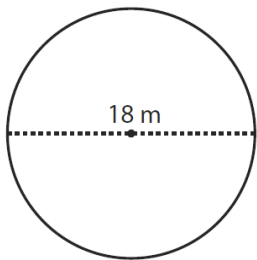
c) choosing a meat and cheese sandwich from the list shown _____

Cheese	Meat
Provolone	Salami
Swiss	Turkey
American	Tuna
Cheddar	Ham

Geometry

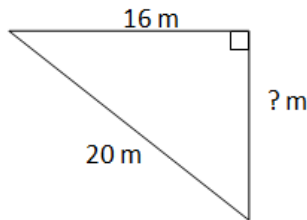
For each shape, find the **perimeter** or **circumference**. Show all work.

6)



Formula: _____

7)



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

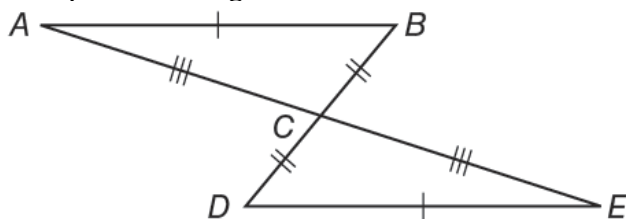
factor pairs

8) 197

9) 198

Current Problem Sets

10) Complete the congruence statements.

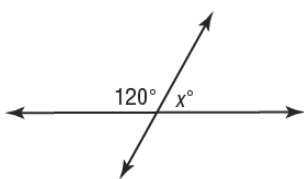


$\sphericalangle A \cong$ _____ $\sphericalangle B \cong$ _____ $\sphericalangle ACB \cong$ _____

$\overline{AB} \cong$ _____ $\overline{BC} \cong$ _____ $\overline{CA} \cong$ _____

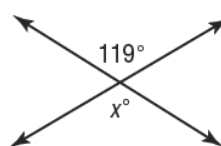
$\triangle ACB \cong$ _____

11) Classify the pairs of angles shown as complementary, supplementary or vertical. Then find the value of x.



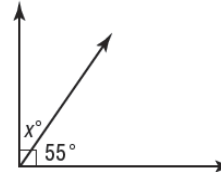
Classification: _____

x: _____



Classification: _____

x: _____



Classification: _____

x: _____

Fractions

Multiply. Change mixed numbers to improper fractions first. Cross-cancel if possible. Simplify all answers.

1) $4\frac{1}{2} * 3\frac{3}{5}$

2) $2\frac{1}{2} * 2\frac{9}{10}$

3) $3\frac{1}{5} * 2\frac{5}{8}$

4) $3\frac{1}{2} * 2\frac{2}{5}$

Probability

Commute to School (Two-Way Table)

	Bus	Walk	Car	Other
9th/10th Grade	106	30	70	4
11th/12th Grade	41	58	184	7

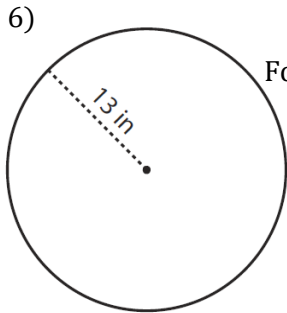
5) Suppose we survey all of the students at PLD and ask them how they get to school and also what grade they are in. The chart shows the results. Suppose we randomly select one student. (Represent all probabilities as simplified fractions and percents.)

a) $P(9\text{th}/10\text{th gr.}) = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ b) $P(\text{walker and } 11\text{th}/12\text{th gr.}) = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

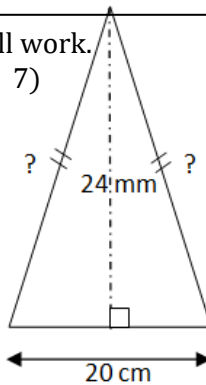
c) $P(\text{not a bus rider}) = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ d) $P(\text{walker or } 11\text{th}/12\text{th gr.}) = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Geometry

For each shape, find the **perimeter** or **circumference**. Show all work.



Formula: _____



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

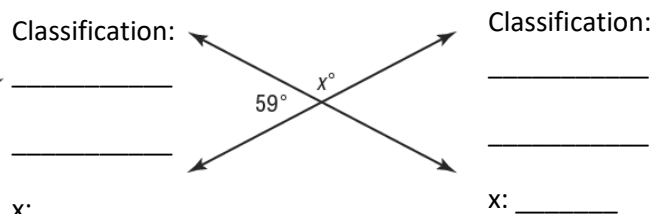
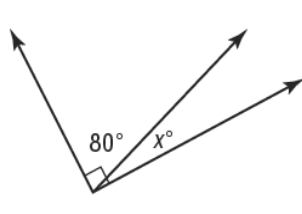
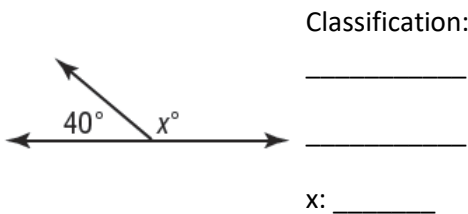
factor pairs

8) 199 _____

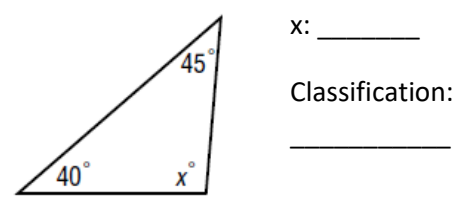
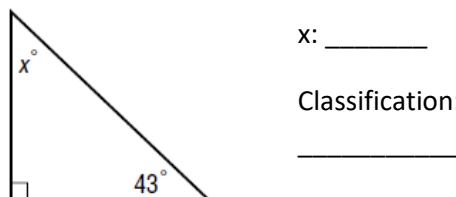
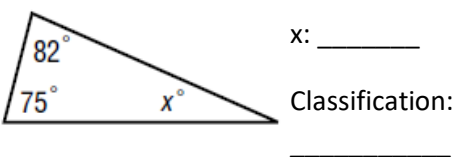
9) 200 _____

Current Problem Sets

10) Classify the pairs of angles shown as complementary, supplementary or vertical. Then find the value of x.



11) Find the missing measure in each triangle. Then classify the triangle as acute, right or obtuse.



Fractions

Divide. Convert to a multiplication problem. Cross-cancel if possible. Simplify all answers.

1) $\frac{8}{9} \div 4$

2) $\frac{1}{3} \div \frac{2}{9}$

3) $\frac{6}{7} \div \frac{2}{3}$

4) $\frac{13}{15} \div \frac{13}{18}$

Probability

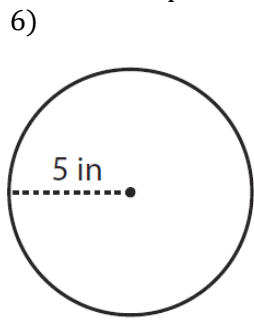
5) The table shows the counts of earned degrees for several colleges on the East Coast. The level of degree and the gender of the degree recipient were tracked. (Represent all probabilities as simplified fractions and percents.)

	Bachelor's	Master's	Professional	Doctorate	Total
Female	542	128	26	18	714
Male	438	165	38	20	661
Total	980	293	64	38	1375

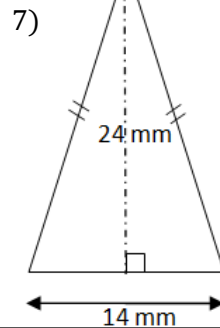
- a) What is the probability that a randomly selected degree recipient is a female? _____ = _____
- b) What is the probability that a randomly selected degree recipient earned a Doctorate? _____ = _____
- c) What is the probability that a randomly selected degree recipient is a woman, given that they received a Master's Degree? _____ = _____
- d) For a randomly selected degree recipient, what is the P(Bachelor's Degree and Male)? _____ = _____

Geometry

For each shape, find the **perimeter** or **circumference**. Show all work.



Formula: _____



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

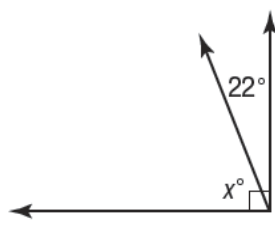
factor pairs

8) 201 _____

9) 202 _____

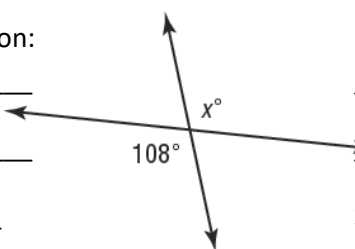
Current Problem Sets

10) Classify the pairs of angles shown as complementary, supplementary or vertical. Then find the value of x.



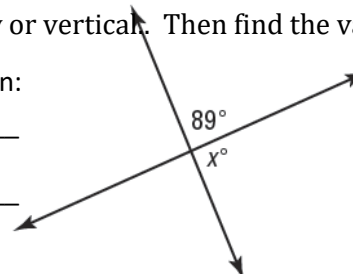
Classification: _____

x: _____



Classification: _____

x: _____



Classification: _____

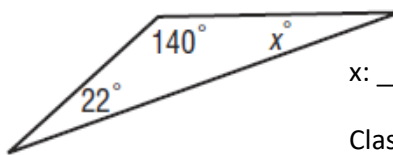
x: _____

11) Find the missing measure in each triangle. Then classify the triangle as acute, right or obtuse.



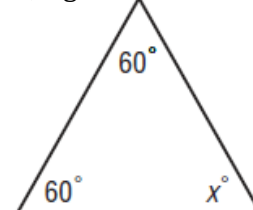
x: _____

Classification: _____



x: _____

Classification: _____



x: _____

Classification: _____

Fractions

Divide. Convert to a multiplication problem. Cross-cancel if possible. Simplify all answers.

1) $\frac{4}{7} \div 2$

2) $\frac{4}{5} \div \frac{7}{10}$

3) $\frac{3}{7} \div \frac{9}{14}$

4) $\frac{5}{8} \div \frac{5}{12}$

Probability

Endangered Animals (Two-Way Table)

5) Animals on the endangered species list are given in the table by type of animal and whether it is domestic or foreign to the United States.

	Mammals	Birds	Reptiles	Amphibians
U.S.	63	78	14	10
Foreign	251	175	64	8

a) What is the probability that a randomly selected animal is a bird found in the US? _____ = _____

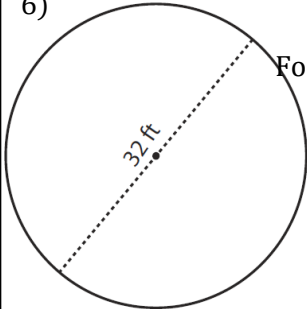
b) What is the probability that a randomly selected animal is not a reptile? _____ = _____

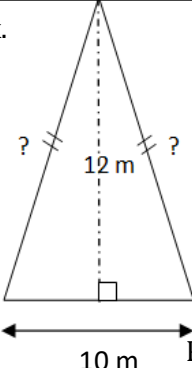
c) What is the probability that a randomly selected animal is a mammal, given that they are found in the US? _____ = _____

d) What is the probability that a randomly selected animal is found in the US, given that they are a bird? _____ = _____

Geometry

For each shape, find the **perimeter** or **circumference**. Show all work.

6)  Formula: _____

7)  Perimeter: _____

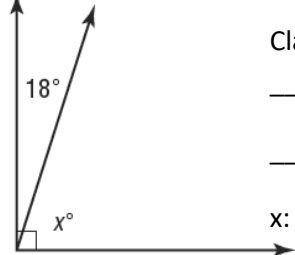
Factoring

Find the prime factors, and then write all factor pairs for each number.

	Prime factorization	factor pairs
8) 203	_____	_____
9) 204	_____	_____

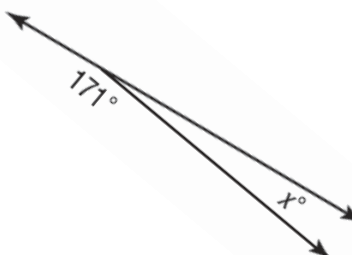
Current Problem Sets

10) Classify the pairs of angles shown as complementary, supplementary or vertical.. Then find the value of x.



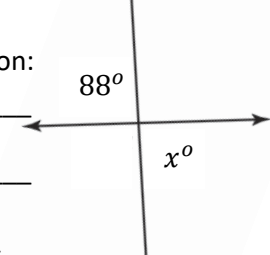
Classification: _____

 x: _____



Classification: _____

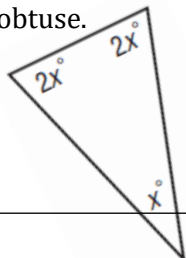
 x: _____



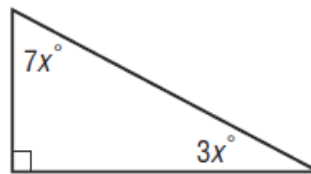
Classification: _____

 x: _____

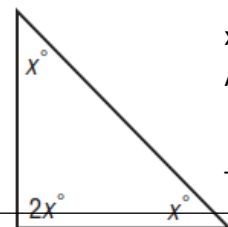
11) Find the value of x. Find the each angle measure in each triangle. Then classify the triangle as acute, right or obtuse.



x: _____
 Angles measures: _____; _____; _____



x: _____
 Angles measures: _____; _____; _____



x: _____
 Angles measures: _____; _____; _____

Fractions

Divide. Convert to a multiplication problem. Cross-cancel if possible. Simplify all answers.

1) $\frac{2}{3} \div 8$

2) $\frac{7}{10} \div \frac{4}{5}$

3) $\frac{7}{8} \div \frac{35}{2}$

4) $\frac{2}{3} \div \frac{14}{9}$

Probability

Leisure Activities (Two-Way Table)

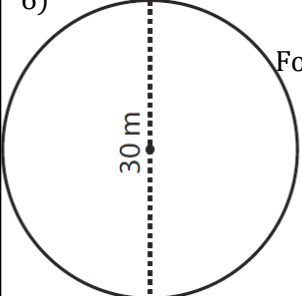
	Dance	Sports	TV	Total
Male	2	10	8	20
Female	16	6	8	30
Total	18	16	16	50

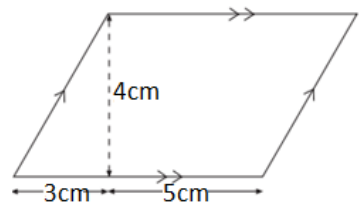
5) Fifty people were surveyed and asked their preference of a leisure activity. The results are displayed in a two-way table. (Represent all probabilities as simplified fractions and percents.)

- a) What is the probability that a randomly selected adult prefers sports? _____ = _____
- b) What is the probability that a randomly selected adult is female and prefers to dance? _____ = _____
- c) What is the probability that a randomly selected adult is male, given that they prefer dancing? _____ = _____
- d) What is the probability that a randomly selected adult prefers sports, given that they are male? _____ = _____

Geometry

For each shape, find the **perimeter** or **circumference**. Show all work.

6)  Formula: _____

7)  _____

 Perimeter: _____

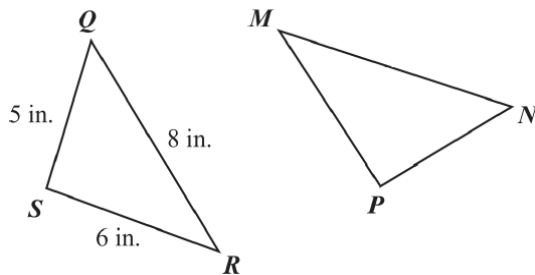
Factoring

Find the prime factors, and then write all factor pairs for each number.

	Prime factorization	factor pairs
8) 205	_____	_____
9) 206	_____	_____

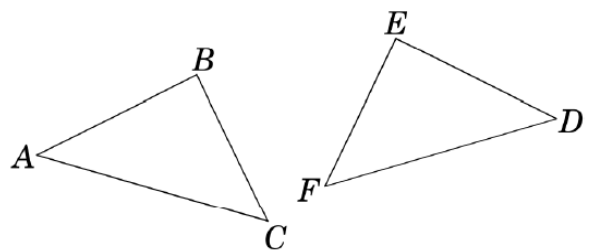
Current Problem Sets

10) In the diagram below, $\triangle QRS \cong \triangle NMP$.



What is the length, in inches, of \overline{MP} ?

11) $\triangle ABC \cong \triangle DEF$ with a right angle at B and $\angle C = 42^\circ$.



What is the measure of $\angle D$?

Fractions

Divide. Convert to a multiplication problem. Cross-cancel if possible. Simplify all answers.

1) $\frac{5}{12} \div 20$

2) $\frac{5}{6} \div \frac{20}{9}$

3) $\frac{2}{3} \div \frac{4}{9}$

4) $\frac{13}{18} \div \frac{13}{6}$

Probability

5) Answer each probability question. Probabilities should be expressed as simplified fractions and whole percents.

a) A letter is chosen at random from the word MATHEMATICS

P(E) = _____ P(not E) = _____ P(before letter I and vowel) = _____ P(before letter I or vowel) = _____

b) Six red marbles and 4 green marbles are in a box. You choose a marble, **replace it**, and then choose another.

P(red, red) = _____

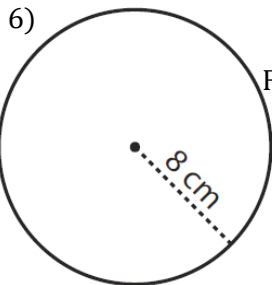
P(red, white) = _____

P(green, green) = _____

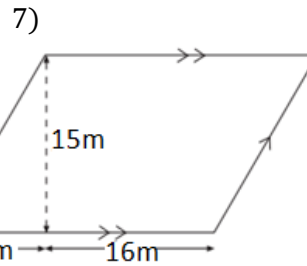
P(red, green) = _____

Geometry

For each shape, find the **perimeter** or **circumference**. Show all work.



Formula: _____



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

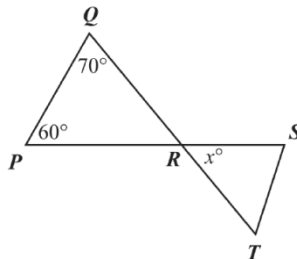
factor pairs

8) 207 _____

9) 208 _____

Current Problem Sets

10) Triangle PQR, triangle RST, and two angle measures are shown



Line segment QT intersects line segment PS at point R.

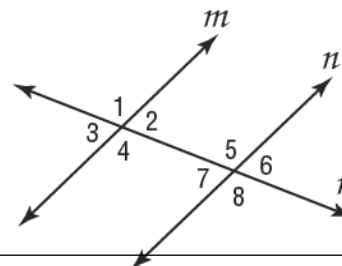
What is the value of x?

11) In the figure at the right, $m \parallel n$ and r is a transversal.

If $m\angle 2 = 45^\circ$, find the measure of each angle.

41 _____ 43 _____ 47 _____ 45 _____

44 _____ 46 _____ 48 _____



Fractions

Divide. Change mixed numbers to improper fractions, then convert to a multiplication problem. (Cross-cancel)

1) $3\frac{3}{5} \div 4\frac{1}{2}$

2) $2\frac{1}{2} \div 2\frac{9}{10}$

3) $4\frac{1}{4} \div 4\frac{3}{10}$

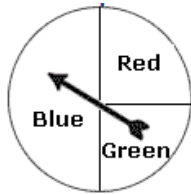
Probability

4) Answer each probability question. Probabilities should be expressed as simplified fractions and whole percents.

a) A dart is randomly thrown at the dart board.

P(Blue) = _____ P(not Red) = _____

P(Blue or Green) = _____



b) Six red marbles and 4 green marbles are in a box. You choose a marble, do **NOT** replace it, and then choose another.

P(red, then red) = _____

P(red, then white) = _____

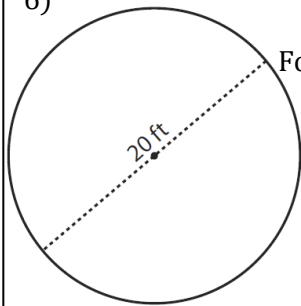
P(red, then green) = _____

P(green, then green) = _____

Geometry

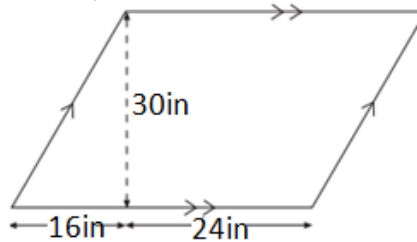
For each shape, find the **perimeter** or **circumference**. Show all work.

6)



Formula: _____

7)



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

factor pairs

8) 209

9) 210

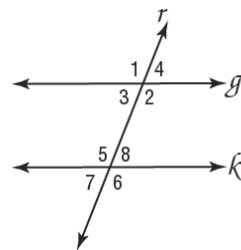
Current Problem Sets

10) In the figure at the right, $g \parallel k$ and r is a transversal.

If $m\angle 7 = 60^\circ$, find the measure of each angle.

$\sphericalangle 1$ _____ $\sphericalangle 3$ _____ $\sphericalangle 2$ _____ $\sphericalangle 5$ _____

$\sphericalangle 4$ _____ $\sphericalangle 6$ _____ $\sphericalangle 8$ _____



11) Refer to the diagram in #10. For each pair of angles, state whether they are corresponding (C), alternate interior (I), alternate exterior (E), vertical (V), or supplementary (S) angles.

$\sphericalangle 1$ and $\sphericalangle 2$ _____

$\sphericalangle 4$ and $\sphericalangle 7$ _____

$\sphericalangle 2$ and $\sphericalangle 3$ _____

$\sphericalangle 4$ and $\sphericalangle 5$ _____

$\sphericalangle 4$ and $\sphericalangle 8$ _____

$\sphericalangle 7$ and $\sphericalangle 3$ _____

Fractions

Divide. Change mixed numbers to improper fractions, then convert to a multiplication problem. (Cross-cancel)

1) $3\frac{7}{10} \div 3\frac{1}{2}$

2) $3\frac{3}{4} \div 1\frac{2}{3}$

3) $1\frac{7}{9} \div 1\frac{2}{9}$

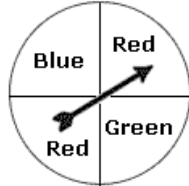
Probability

5) Answer each probability question. Probabilities should be expressed as simplified fractions and whole percents.

a) A dart is randomly thrown at the dart board.

P(Blue) = _____ P(not Red) = _____

P(Blue or Green) = _____



b) Two red, 1 blue, and 3 green marbles are in a box. You choose a marble, do **replace it**, and then choose another.

P(blue, then blue) = _____

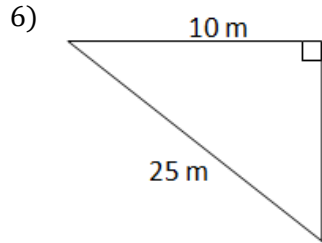
P(red, then blue) = _____

P(blue, then red) = _____

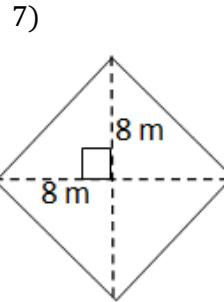
P(green, then green) = _____

Geometry

For each shape, find the **perimeter**. Show all work. Round to the nearest tenth.



Perimeter: _____



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

factor pairs

8) 211 _____

9) 212 _____

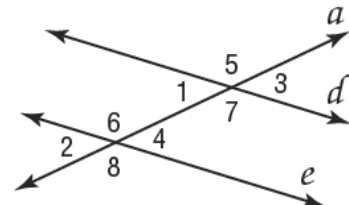
Current Problem Sets

10) In the figure at the right, $d \parallel e$ and a is a transversal.

If $m\angle 5 = 143^\circ$, find the measure of each angle.

$\angle 1$ _____ $\angle 3$ _____ $\angle 2$ _____ $\angle 7$ _____

$\angle 4$ _____ $\angle 6$ _____ $\angle 8$ _____



11) Refer to the diagram in #10. For each pair of angles, state whether they are corresponding (C), alternate interior (I), alternate exterior (E), vertical (V), or supplementary (S) angles.

$\angle 1$ and $\angle 2$ _____

$\angle 4$ and $\angle 7$ _____

$\angle 2$ and $\angle 3$ _____

$\angle 4$ and $\angle 5$ _____

$\angle 4$ and $\angle 8$ _____

$\angle 7$ and $\angle 3$ _____

Fractions

Divide. Change mixed numbers to improper fractions, then convert to a multiplication problem. (Cross-cancel)

1) $3\frac{4}{5} \div 3\frac{7}{10}$

2) $2\frac{1}{4} \div 1\frac{5}{8}$

3) $3\frac{3}{4} \div 2\frac{1}{7}$

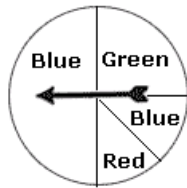
Probability

5) Answer each probability question. Probabilities should be expressed as simplified fractions and whole percents.

a) A dart is randomly thrown at the dart board.

P(Red) = _____ P(Blue) = _____

P(Blue or Red) = _____



b) Two red, 1 blue, and 3 green marbles are in a box. You choose a marble, do **NOT** replace it, and then choose another.

P(blue, then blue) = _____

P(red, then blue) = _____

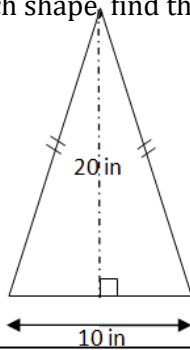
P(blue, then red) = _____

P(green, then green) = _____

Geometry

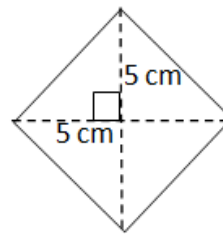
For each shape, find the **perimeter**. Show all work. Round to the nearest tenth.

6)



Perimeter: _____

7)



Perimeter: _____

Factoring

Find the prime factors, and then write all factor pairs for each number.

Prime factorization

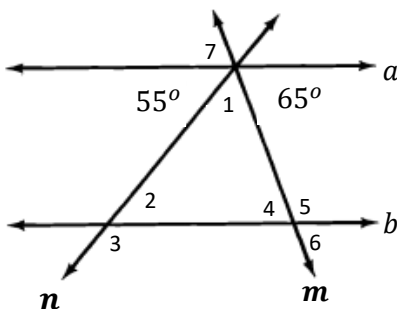
factor pairs

8) 213

9) 214

Current Problem Sets

10) Parallel lines *a* and *b* when cut by transversals *m* and *n*. Find the unknown angle measures.



1 = _____

2 = _____

3 = _____

4 = _____

5 = _____

6 = _____

7 = _____

11) Refer to the diagram in #10. For each pair of angles, state whether they are corresponding (C), alternate interior (I), alternate exterior (E), vertical (V), or supplementary (S) angles.

55° and $\sphericalangle 2$ _____

$\sphericalangle 4$ and $\sphericalangle 7$ _____

$\sphericalangle 2$ and $\sphericalangle 3$ _____

$\sphericalangle 4$ and $\sphericalangle 5$ _____

$\sphericalangle 4$ and $\sphericalangle 6$ _____

$\sphericalangle 7$ and $\sphericalangle 6$ _____