Math 2 Classwork 6

WARM-UP

1 Mental math. Find a value of each expression.

70 – 3 + 13 = 53 – 5 – 23 = 23 + 8 + 92 =

2 Fill in the brackets. *Example:* 10 ones make (1 tens).

a) 10 tens make ( ) b) 50 ones make ( ) c) 50 tens make ( )

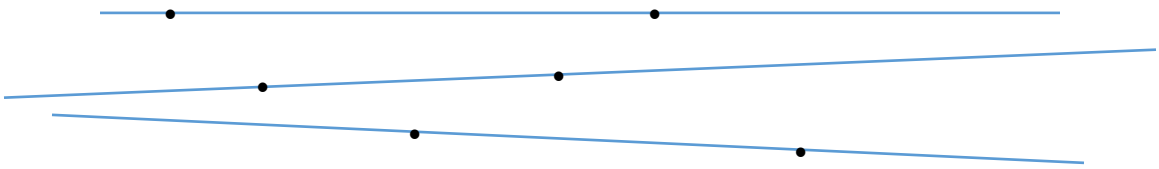
3 Fill in the missing digits:

$$\begin{array}{r} 2\ 2 \\ +\ 9\ \square \\ \hline 1\ \square\ 5 \end{array} \qquad \begin{array}{r} \square\ 6 \\ +\ 1\ 0 \\ \hline 6\ \square \end{array} \qquad \begin{array}{r} \square\square \\ +\ 5\ 2 \\ \hline 8\ 0 \end{array}$$

Homework Review

Problem #1: a) How many points are marked on each line? - ☐

b) How many points are marked on all 3 lines? - ☐

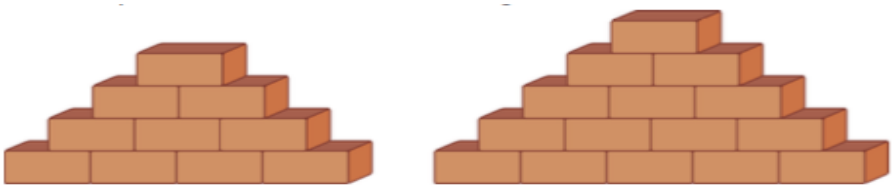


c) Draw 3 straight lines and place 3 points on each line in such a way that you will get a total 6 points. *Hint:* lines can intersect.

Problem #2: Remember the triangular numbers? Answer the following questions:

a) How many more bricks are there in the larger stack? _____

b) How many bricks should be added if you add one additional layer of the bricks? _____



New Material I

What is the length?

The **length** of an object is its most extended dimension - that is, its longest side.

By measuring the length, we can tell how long or short something is.

4

a) Julia decided to measure the length of the hall in her school. The entire floor is made up of square tiles, so she decided to measure by counting tiles. She finds that from one end of the hallway to another end, there are 134 tiles.

What is the length of the hallway in tiles? _____

b) Ben's school doesn't have tiles on the floor of the hallway, and he decided to measure the length of the hallway in his feet. He tried to be very precise and carefully put one foot in front of another one. He finds that from one end of the hallway to another end, there are 188 his feet.

What is the length of the hallway in feet? _____

Can you compare the lengths of the hallways in Julia's and Ben's schools? Why? _____

How to measure a length?

Over 5,000 years people use the human body as a reference of different length.
For example, the **cubit** was a unit that indicated the length from the elbow to the fingertip.

cubit – from Latin *cubitum*, "the elbow."

Even today, units of length based on the human body are used in countries such as the United States, such as the yard, foot, and inch.

1 inch – thumb width
1 foot – foot length, heel to toe
1 yard – nose to fingertip, with arm straight out to side, head facing front

5

What do you think is the problem of using body parts to measure things? Why does everyone use a ruler in nowadays? Examine your ruler. Notice that it has markings on both sides.

1 Inch

1 centimeter

6 Using your ruler draw a ray starting at point A. Place three points B, C and D on the ray so that $\overline{AB}$ = 5 centimeters, $\overline{AC}$ = 3 centimeters and $\overline{AD}$ = 7 centimeters. Find the length of the segments $\overline{CB}$, $\overline{BD}$ and $\overline{CD}$.

$\overline{CB}$ = _____ cm $\overline{BD}$ = _____ cm $\overline{CD}$ = _____ cm

Metric System

1 kilometer = 1,000 meters
1 meter = 10 decimeters
1 decimeter = 10 centimeters
1 cm = 10 millimeters

7 Convert using examples:

120 cm = 1m + 20 cm
208 cm = _____
333 cm = _____

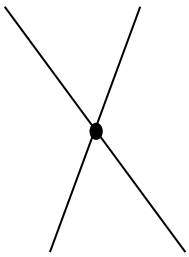
2 m = 200 cm = 20 dm
5 m = _____
3 m = _____

3 dm = 30 cm
21dm = _____
40 dm = _____

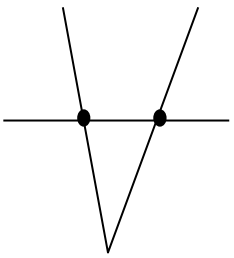
8 John rode 2 kilometers on his bike. His sister Sally rode 3000 meters on her bike. Who rode the longer distance? How much more? (answer in km) _____

REVIEW

9 How many straight lines, rays, and line segments can you find in each drawing?



☐ - Straight lines
☐ - Rays
☐ - Line segments



☐ - Straight lines
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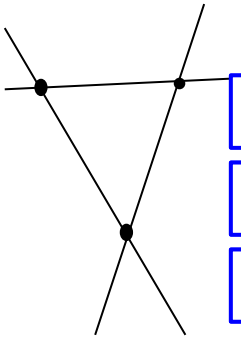
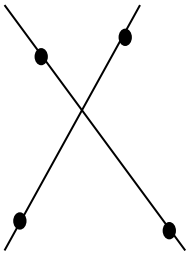
☐ - Line segments



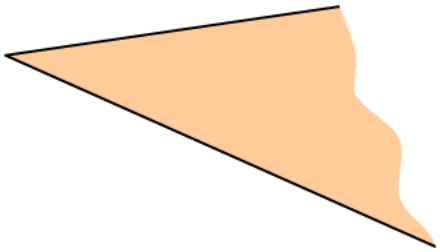
☐ - Straight lines
☐ - Rays
☐ - Line segments



☐ - Straight lines
☐ - Rays
☐ - Line segments

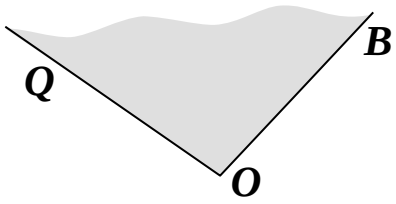
New Material II

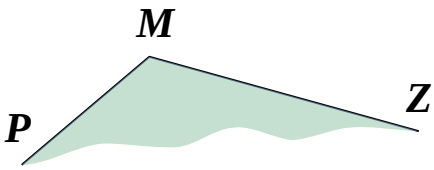
An **angle** is a figure formed by two rays sharing a common end point (vertex).
Every angle divides the plane into two regions: points inside the angle (that is, between the rays) and points outside the angle.

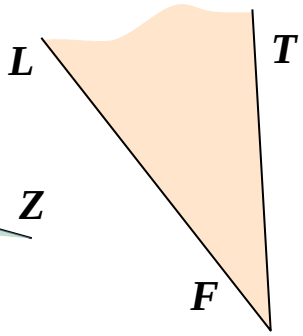


If the vertex of the angle is the point **A** and the two sides are rays **AB** and **AC**, then the angle is denoted **∠BAC, ∠CAB** and sometimes by only one letter - vertex of the angle – **∠A**
The word *angle* comes from the Latin word *angulus*, meaning "a corner."

10 Denote each angle in two different ways.







_____ _____ _____

_____ _____ _____

11 Draw two lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ that intersect in a point *O*. How many angles can you see? Can you denote them by only one letter? Name each angle.

Word problems. How to approach them.

12

Solve the problems:

a) Walter had 8 marbles. Then Lamont gave him some more marbles. Now Walter has 17 marbles. How many marbles did Lamont give him?

Given (what we know): _____
_____

Question (what we should find): _____
Solution: _____

Answer:_____ marbles Lamont gave to Walter

b) There are twelve girls in a class of 25 students. How many boys are in the class?

Given (what we know): _____
_____

Question (what we should find): _____
Solution: _____

Answer:_____ _____ boys in the class.

Did you know …

The metric system was first developed in France during the French Revolution. A French law passed in 1795 defined five units of measure. Three of them are still in use today. They are the meter, the unit of length, the gram that is the unit of mass, and the liter, which is the unit of volume.

In 1960 the rules for the metric system were revised. The revised system was called the "International System of Units" (which is often written "SI" for short). The definition of SI also included rules for writing SI quantities. These rules are the same for all languages.

In the metric system, the length is measured in meters. The symbol for the meter is the letter "m". The meter was originally defined as 1⁄10,000,000 of the distance between the North Pole and the Equator on the meridian that passed through Paris. In 1799, a platinum bar equal to this length was made and became the "prototype meter."

In the metric system, all units have a "symbol". Symbols are a shorthand way of writing the names of units.

The imperial system works with units that are still used in the United Kingdom, Canada and other countries formerly part of the British Empire.

Only three countries in the world officially use Imperial system – The United States, Myanmar (Burma), and Liberia, making up 5% of the world's population using that system.