Math 3, Classwork 24

WARM UP

1. Solve the problems using an equation:

a) Total number of students in a school is 656. The number of girls is 86 more than the number of boys. How many boys are in school? (Take number of boys as *x)*

b) Milan is 36 years younger than his mother. His mother is 43 years old. How old is Milan? (Take Milan's age as *y*)

c) Sum of two numbers is 85. The greater number is 13 more than the smaller. What is the smaller number? (Take smaller number as *a*)

2. Solve the problems. Use a Venn diagram.

a) There were 10 girls on the school yard. 7 of them had scrunches and 6 of them had ponytails. How is that possible?

What is the question you shall ask?_____

b) There are apples and pears on the table. There are 4 apples less than apples and pears together, there are 7 less pears than apples and pears together.

How many fruits are there on the table _____?

How many apples_____?

How many pears _____?

3. What is the greatest number that can be used to keep an inequality correct?

a) $50 \times \_\_\_ < 157$ b) $70 \times \_\_\_\_ < 369$ c) $80 \times \_\_\_ < 508$

d) $\_\_\_ \times 30 < 231$ e) $\_\_\_\_ \times 40 < 369$ f) $\_\_\_ \times 90 < 396$

4. Write (or say) each fraction using words:

a) 3/5 _____

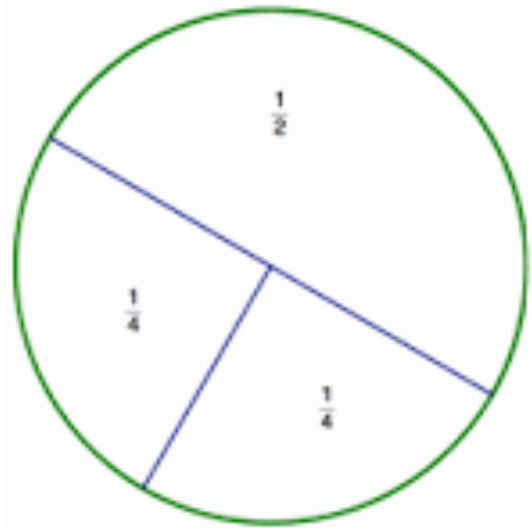
b) 2/3 _____

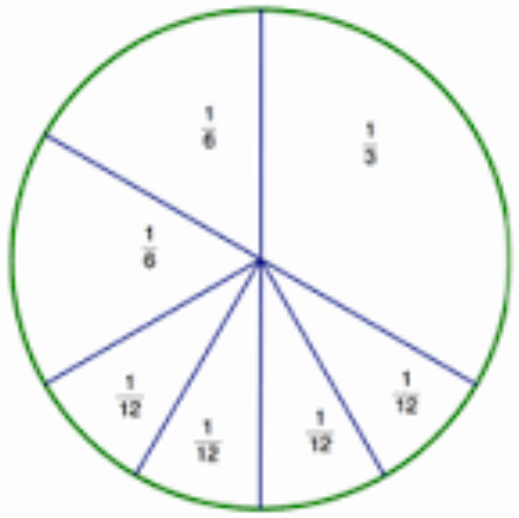
c) 1/6 _____

REVIEW Fractions

5. Working independently, make three your own examples for adding two or more like fractions, based on the diagram (simplify fractions where possible):

Example: $\frac{1}{12} + \frac{1}{12} + \frac{1}{12} = ?$





a) _____

b) _____

c) _____

6. Reduce the following fractions to the lowest term:

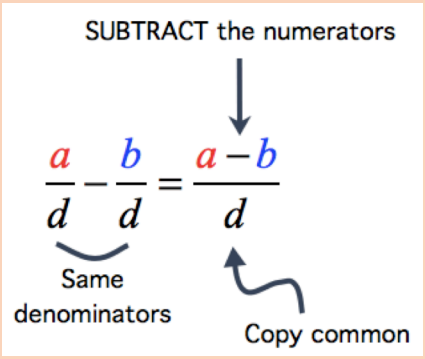
a) $\frac{18}{60} =$ b) $\frac{21}{70} =$ c) $\frac{125}{200} =$

To simplify a fraction (reduce it to lowest terms), the numerator and the denominator must be divided by the same nonzero whole number. A fraction is in lowest terms when the greatest common factor (GCF) of its numerator and denominator is one.

NEW MATERIAL

Subtraction of like fractions (fractions with the same denominator).
Subtraction a fraction from a whole number

To **SUBTRACT** fractions with like or the same denominator, just subtract the numerators then copy the common denominator. Always reduce your final answer to its lowest term.



7. Solve the problems. Draw diagrams if needed to help yourself:

a) Matt cut a cake into 8 equal slices. He ate three slices.

- What fraction of the cake did he eat? _____
- What fraction of the cake was left? _____

b) Julia planted 12 flowers. After a while 7 flowers started to grow.

- What part of the flowers did start to grow? _____
- What part of the flowers did not start to grow? _____

8. Add and subtract the like fractions (simplify where possible):

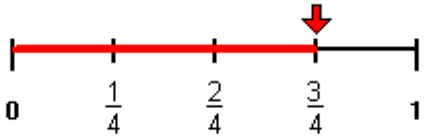
2/3 + 1/3 =	2/5 + 3/5 =	3/9 + 4/9 =
1/12 + 5/12 + 6/12=	2/3 – 1/3 =	4/7 – 2/7 =
5/9 – 2/9 =	9/10 – 1/10 – 6/10 =	1 – 1/4 =

Comparing fractions

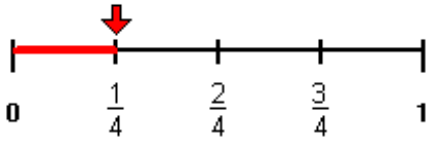
9. Solve the problems:

a) Elliot rode his bike for three-fourths of a mile and Ronav rode his bike for one-fourth of a mile. Which boy rode his bike farther?

Elliot:



Ronav:



$\frac{3}{4}$? $\frac{1}{4}$

These fractions have like denominators, so we **compare the numerators**

b) Victoria ate three-fourths of a pie and Julia ate two-thirds of a pie. If both pies were the same size, then which girl ate more pie?

These fractions have unlike denominators (and unlike numerators). It would be easier to compare them if they had like denominators. We need to convert these fractions to equivalent fractions with a common denominator in order to compare them more easily.

Victoria: $\frac{3}{4} = \frac{n}{12}$ $\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$

Julia: $\frac{2}{3} = \frac{n}{12}$ $\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$

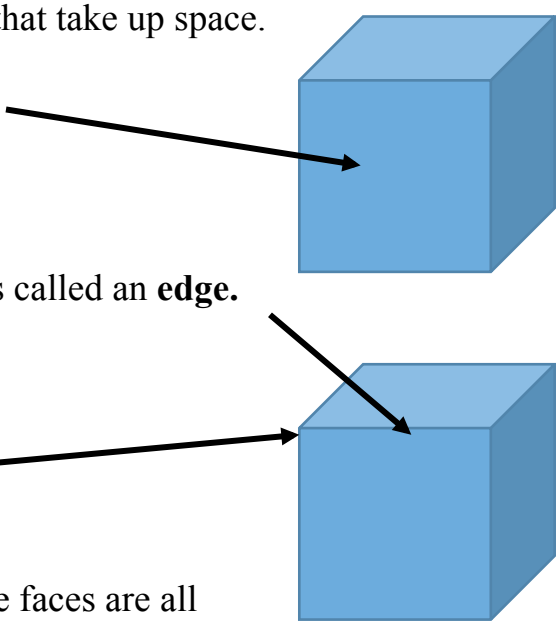
Hint: Now you have to compare $\frac{9}{12}$ and $\frac{8}{12}$

Solution:

REVIEW Geometric Solids

Geometric solids are three-dimensional shapes that take up space.

A flat side of a geometric solid is called a **face**.



A line segment where the faces of a solid meet is called an **edge.**

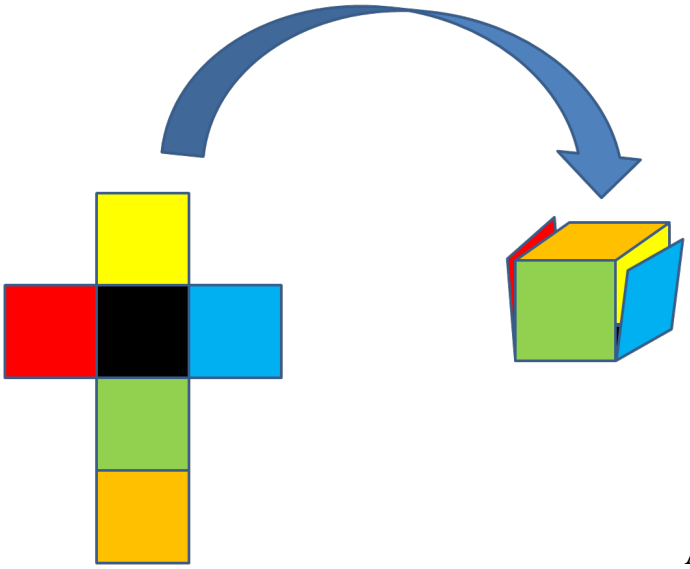
A point where edges meet is called a **vertex**.

A geometric solid with no curved surfaces whose faces are all polygons is called a **polyhedron**.

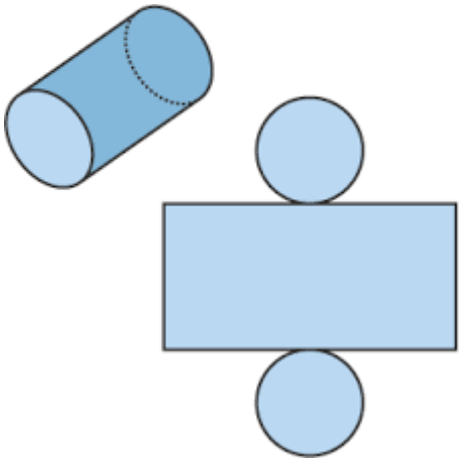
NETS

A **net** is a 2-dimensional shape that can be folded to make the surface of a 3-dimensional solid.

When the square faces of a **cube** are separated at the edges and laid out flat, they make a two dimensional figure called a **net**. There are **eleven** different **nets** for a **cube**. A two-dimensional shape that can be folded into a three-dimensional figure is a **net** of that figure



A cube!



A Cylinder!

10. To make a net of a cube, first look at one, such as a dice. How many faces does it have? Six, so make sure that your net has six squares. Draw at least three possible nets of the cube (use a ruler). It's easy since a cube has 11 different nets!