Math 2 Classwork 27

Warm Up

1

Peter and Julia labeled point A on a number line. Each of them was asked to write 3 consecutive numbers.
Peter wrote: *A+4, A+5, and A+6.*
Julia wrote *A-2, A-1, and A.*

Who of them is right? _____

2

Mark order of operation and solve

5 ×3 + 6 =_____ 10 – 2 × 5 =_____

5 + 3 × 6 = _____ (10 – 2) × 5 = _____

(5 + 3) × 6 =_____ 10 × 5 – 2 × 5=_____

3

Convert the following units:

5km = _____m

10m = _____ cm=_____mm

25dm = _____ cm=_____mm

361 cm = ___ m ___ dm ___ cm

3m 2cm = _____ cm

Homework Review

4

Calculate:

40 ÷ 10 =	560 ÷ 10 =	3300 ÷ 10 =	7800 ÷ 10 =
5800 ÷ 100 =	2100 ÷ 100 =	3300 ÷ 100 =	7800 ÷ 100 =

5

Solve each expression using the correct order of operations

72 ÷ 9 – 4 × 3 ÷ 6 +20 ÷ (5 – 2) × 3 =_____

90 – 36 ÷ 9 × 9 – (8 + 5 × 2) =_____

3 × 8 ÷ 8 + 27 ÷ 3 × (2 + 1) =_____

New Material I

2D shapes:

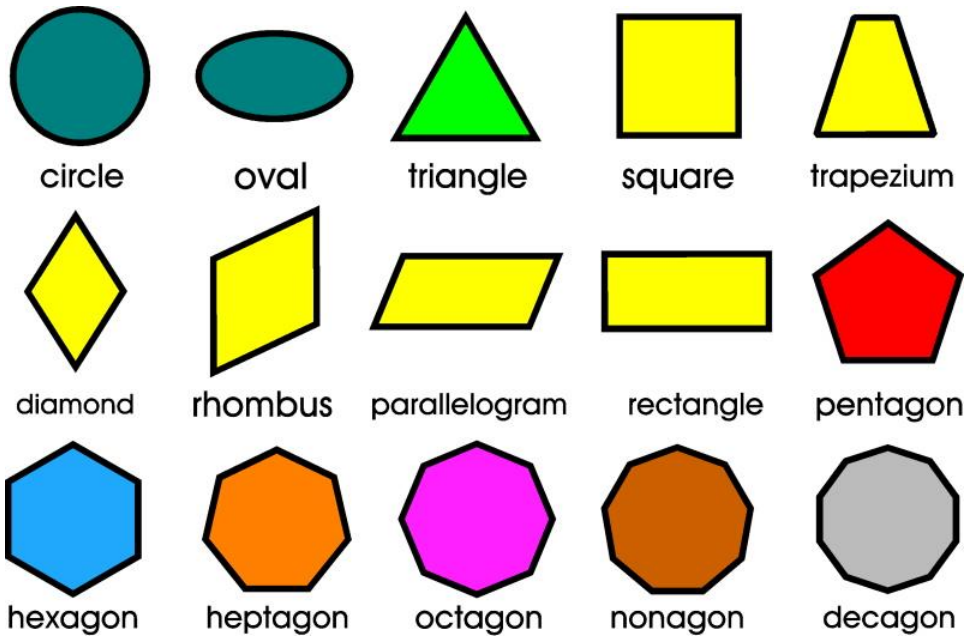
Triangle: 3 points (vertices) connected by 3-line segments

Quadrilateral: 4 vertices, connected by 4 segments

P**entagon** (5 vertices), **Hexagon** (6 vertices), and so on.

All of them are special cases of a **polygon**: a figure consisting of some number of points (**vertices**), connected with line segments to form a closed figure. These line segments are called the **sides** of the polygon

6 Look at each shape and explain the name of these shapes.



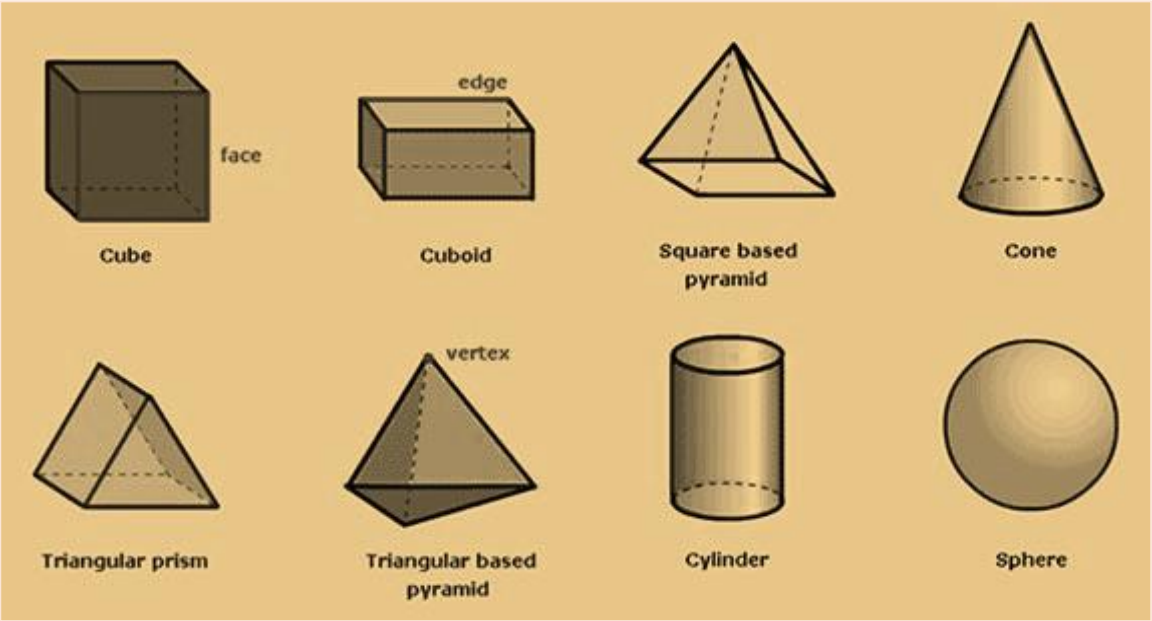
3D shapes:

Shapes that are flat, like squares and rectangles, have two dimensions: length and width. Three-dimensional shapes, like cereal boxes and cans, also have height.

Some 3D shapes only have flat faces. Such shapes are called **polyhedrons:**

Other 3D shapes also have non-flat surfaces:

 Sphere  Torus  Cylinder  Cone



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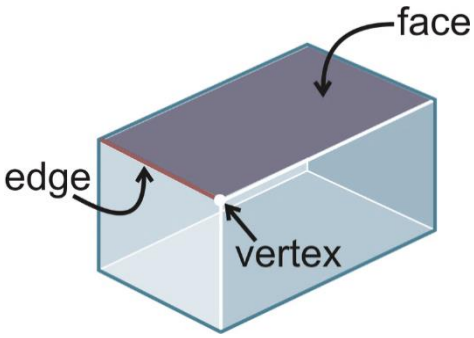
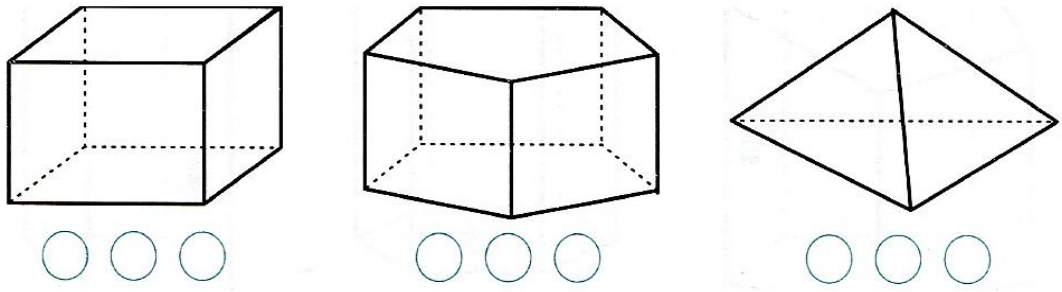
Polyhedrons.

A **polyhedron** is a solid with flat faces (from Greek poly- meaning "many" and -edron meaning "face").

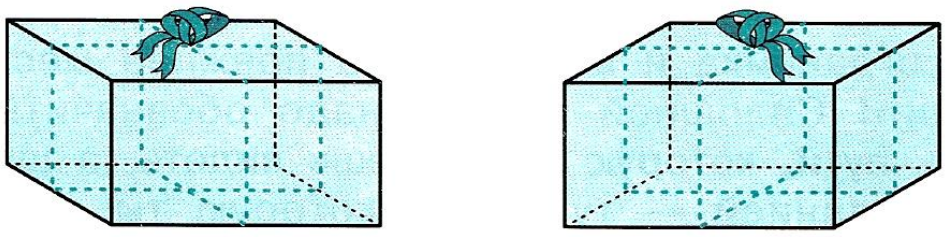


In the circles, write the number of vertexes, faces, and edges each polyhedron has.

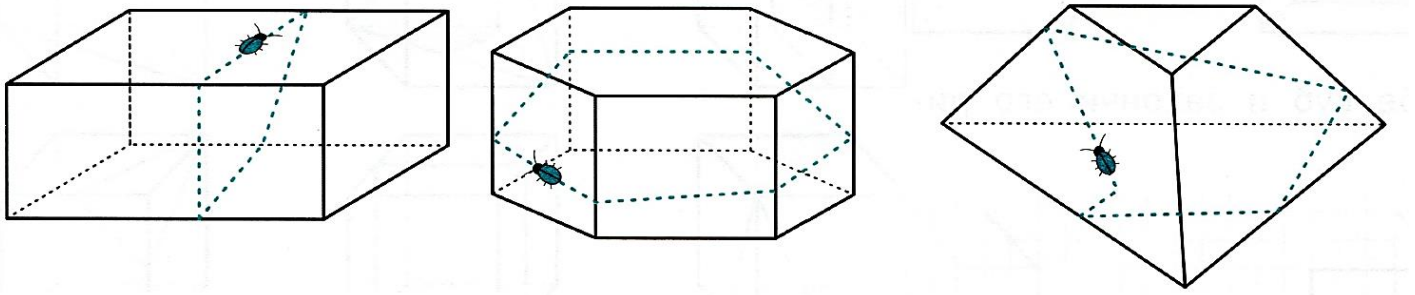


8

Ribbon was used to tie a bow around each of the presents. Trace with a solid line the part of the ribbon that you would be able to see.



9 Imagine that there is a bug crawling over the surface of a solid polyhedron. Trace with a solid line the parts of the path you would be able to see. Trace with dashed lines the parts of the path that you would not be able to see.



Division by zero.

Division is a reverse operation for multiplication.

A* ÷ *B* = *C means that C* × *B* = *A

If B = 0, then we divide A by 0 and there is no number, which, multiplied by **0**, gives ***A*** (assuming A≠**0**), and so **division** by zero is **undefined**.

A* ÷ *0 has no meaning since ***C* × *0* = *0 and never* = *A!***

What do we do when we divide? "The division is an action of splitting objects or subjects into equal parts or groups. It is the result of "fair sharing."

For example, there are 12 apples, and two mice want to share them. How can they divide the apples? Twelve apples divided by 2 – each monkey gets six apples: 12 ÷ 2= 6.
Now, let us try to divide the 12 apples between zero mice. How much does each mouse get? Does that question even make sense? We cannot share anything among zero mice.

If we want to think like mathematicians, we will say - multiplication is an inverse operation for division. When we divide 12 by 2, we are getting 6. It also means that when we multiply six by 2, we will get 12. 12 ÷ 2 = 6. 6 × 2 = 12
What is 12 divided by 0? It means that we must find a number which after multiplying by 0, will get to 12. But we know that multiplying by 0 always gives 0. Such a number cannot be found. It simply doesn't exist, so we are saying that **division** by zero is **undefined**.

REVIEW I

10 a) Luke has two ten-dollar bills. His younger sister Leia has a five-dollar bill. They combine their money to buy a gift for their mother that costs $22. How much change will they receive?

_____

_____

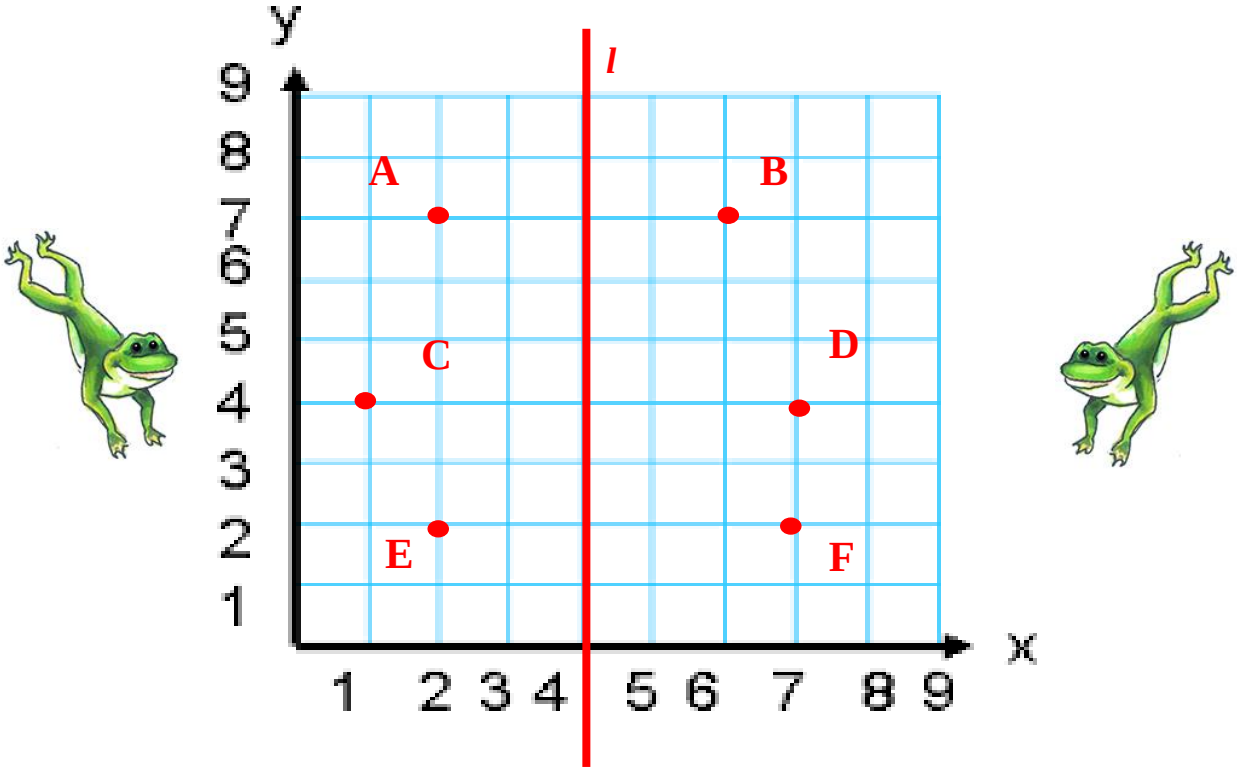
b) Jennie makes quilts. She can make 7 quilts with 21 yards of material. How many yards of material would be required to make 12 quilts?

_____

11 Some points are located on square – unit grid and line ***l*** are drawn.

a) Name the coordinates of each point

b) Find all pairs of points, which are symmetrical in respect of line ***l***.



_____

_____

12 Compare using >, <, or =.

100 × 2 □ 100 + 100 + 100	a × 2 □ a : 2	12 : c □ 18 : c
56 × 3 □ 56 × 8	m × n □ n × m	d : 4 □ d : 5
25 × 4 □ 4 × 25	b + b × 7 □ b × 8	y : 1 □ y × 1
17 × 8 □ 7 × 17	x × 7 – x □ x × 6	z + 1 □ z × 1

13 On the diagrams of three sets A, B, and C, put 2 elements - a heart and a cloud, so that:

a) Each set contains two elements

b) Set A contains two elements, set B also contains two elements, and set C contains one element.

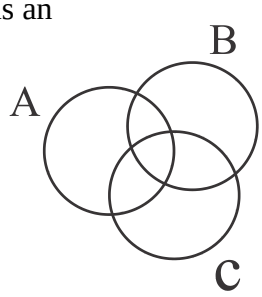
c) Set A contains two elements, sets B and C contains 1 element each

d) Set A contains two elements, set B contains one element, and set C is an empty set

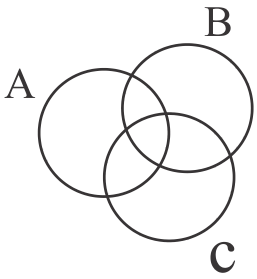
e) Set A contains two elements, set B contains two elements, and set C is an empty set

f) Each set contains one element

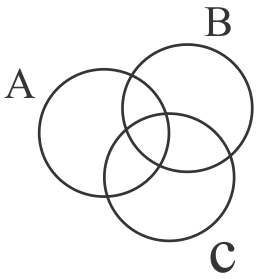
a)



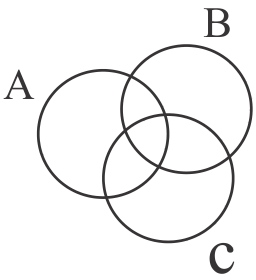
b)



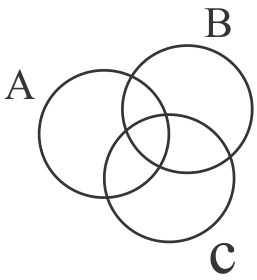
c)



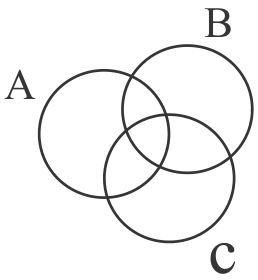
d)



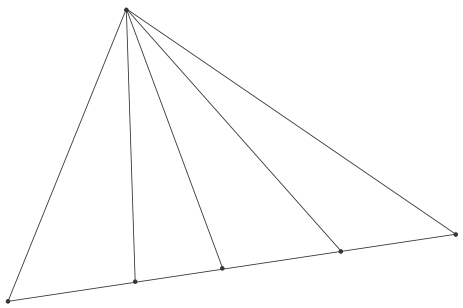
e)



f)



14 How many segments are there on the picture below? How many triangles?



15 The length of a rectangle is equal to **a** cm and its width is **b** cm. Explain the geometric meaning of the following expressions:

a – b _____

a × b _____

a × 2 + b × 2 _____