

WARM-UP

1. Multiplication Gym – 3 minutes



2. Calculate mentally and write down the answers:

$6 \div 2 =$

$8 \div 4 =$

$9 \div 3 =$

$60 \div 2 =$

$80 \div 4 =$

$90 \div 3 =$

$60 \div 20 =$

$80 \div 40 =$

$90 \div 30 =$

3. Compare, using $<$, $>$, $=$. (Remember that $1\text{dm} = 10\text{cm}$; $1\text{ dm}^2 = 100\text{cm}^2$)

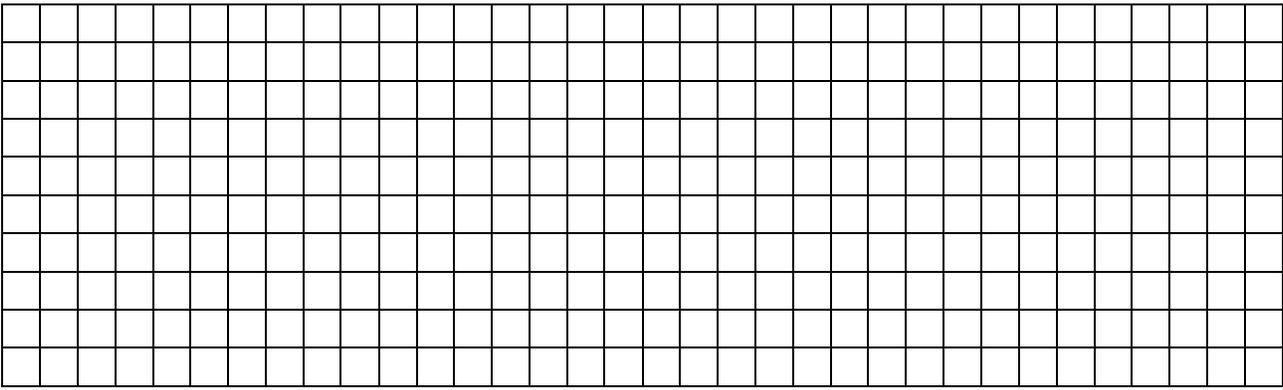
50 meters $\underline{\hspace{1cm}}$ 5000 cm

200 dm $\underline{\hspace{1cm}}$ 2 m

200 cm^2 $\underline{\hspace{1cm}}$ 2m^2

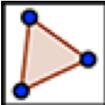
Homework REVIEW

4. Draw a rectangle that consists of 2 squares with side length 2 cm and one square with side length 4 cm. Find the perimeter of this rectangle.

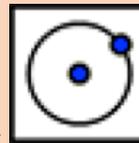


NEW MATERIAL

“Many faces” of a POINT.

- I. Point on the plane – 
- II. Point plotted on the shape – 
- III. Point as a position of the line intersection – 
- IV. Points as the endpoints of a segment – 
- V. Points as the vertexes of a polygon – 

VI. Point is a center of the circle that is passing through another point –



5.

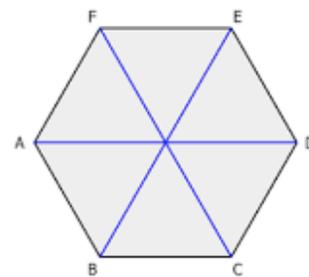
- Use a compass to draw a circle centered at a given point **A** and passing through another point **B** (choose your own compass opening).
- Use a straightedge and connect the point on the circle to the center to make a radius r .

• A

6.

Lets learn how to build a symmetrical hexagon using a compass and a straight edge only!

compass and a



- Use a compass to draw a circle centered at a given point **A** and passing through another point **B** (choose your own compass opening).
- Place your compass with the same radius setting at the point **B** and make a mark on a circle on either side of point **B**. Mark this point with a letter **C**
- Place your compass with the same radius setting at the point **C** and make a mark on a circle going in the same direction as you did in step b). Mark this point with a letter **D**.
- Repeat step c) three more times or until you will come back to a point **B**.
- Take a straight edge and connect each point with two neighboring points.
- Using a straight edge connect each point with a center of your initial circle – point **A**.

● A

Questions:

- If we set the distance between point A (center of the circle) and point B to be 1 unit, what is the distance AC? _____ AD? _____.
- What can you tell about the 6 angles, between segments connecting center of the circle A with points B, C, D, E, F, G – $\angle BAC$, $\angle CAD$, $\angle DAE$, $\angle EAF$, $\angle FAG$ and $\angle GAB$.
- Can you tell the measure of each angle in degrees, if we know that the full angle is 360° ?

REVIEW

7. Work these out mentally and write down the answers (remember about an order of operations):

$$8 \times 3 \div 6 =$$

$$15 \div (3 \times 5) =$$

$$6 \times 5 \times 4 =$$

$$99 \times (99 - 99) =$$

$$11 + 15 \div 3 =$$

$$48 \div 8 \times 8 =$$

8. a) Julia and Victoria had 24 candies and they decided to equally divide all candies between two of them. How many candies did each girl get? _____
- b) Then Jonathan came and asked girls to share their candies with him as well. Girls decided to share all 24 candies equally between 3 of them. Is it possible? How many candies will each child get? _____
- c) Then Eli joined them and asked to give him some candies as well. Girls were very kind and decided to share all 24 candies equally between 4 of them. Is it possible? How many candies will each child get? _____
- d) And then Steven and Milan came and ... asked for candies! Now girls have to share their 24 candies with 6 children. Is it possible? How many candies will each child get? _____

How to find the unknown in the division equation.

Multiplication and division are **inverse operations**. It means that if we take a number and multiply it by another number and then divide the result by the same number, we will end up with our initial number.

$$11 \times 2 \div 2 = 11$$

$$34 \times 9 \div 9 = 34$$

$$52 \div 26 \times 26 = 52$$

To solve for x the following equation: $5x = 25$, we have to “undo” multiplying by 5. So we have to divide BOTH part of equation (this is an equation, remember?) by 5.

$$5x \div 5 = 25 \div 5 \quad \text{and we get} \quad x = 5$$

Lets check our work (always do it!): $5 \times x = 25$, using the solution we found, we write:

$$5 \times 5 = 25 \text{ or } 25 = 25! \text{ Our solution is correct.}$$

9.Solve for x and check your answer:

a) $8 \div x = 4$

b) $x \div 20 = 2$

c) $x \times 12 = 48$

- 10.** Children were making bracelets. To make 4 bracelets, they need 80 beads, the same number for each bracelet. How many beads do they need to make 5 bracelets?

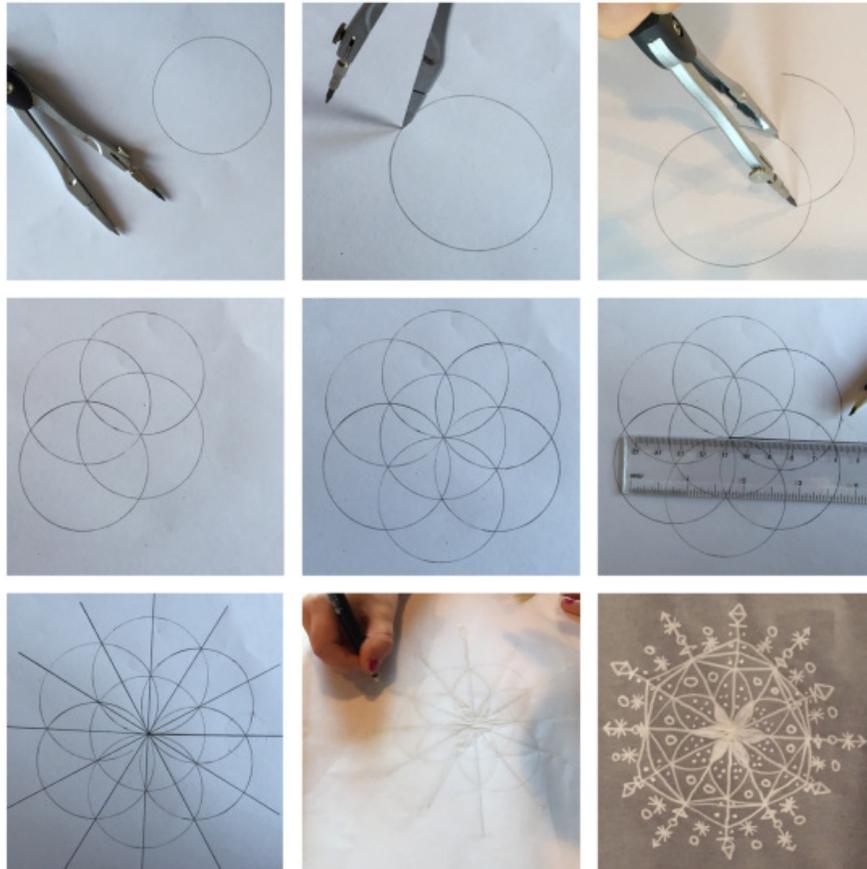
CHALLENGE YOURSELF**11**

Calculate by most optimal way. (Hint: use a commutative property of addition)

$$(200 + 198 + 196 + \dots + 2) - (1 + 3 + 5 + \dots + 199)$$

Did you know ...

You can use a compass to make ... a six-point snowflake!



Instructions, Part 1 – Making the Template:

- Use compass to draw a circle at the center of the paper. Place the compass point at the center of the paper and carefully rotate, dragging the pencil tip completely around the point to create a circle.
- As shown above, keeping the compass at the same radius setting, align the point so that it is on the edge of the original circle. Draw a second circle. This will intersect the original circle twice as well as pass through its center point.
- Next, align the compass point on one of the intersections of the first and second circle as shown above. Draw a third circle.

- Repeat, aligning the compass point on the intersections of the original circle and the next circle until you have made it all the way around the original center circle.
- Draw a line from the center of the original circle to each of these intersection and about 1/2"-1" beyond.
- You have now divided the circle into six even segments! You can continue to divide radially until the circle is divided into 12 equal fractions as shown above.

Instructions, Part 2 – Using the Template:

- Use the template created in Part 1 by overlaying a sheet of trace paper and securing in place with a bit of tape at the corners.
- Trace the basic radial symmetry in metallic or white paint pen adding freehand details as you go.
- Create individually or as a “team” by making sure each artist goes all the way around the snowflake with his or her individual detail (repeating 6-12 times).
- Remove from template and hang in a window or overlay on dark construction paper to “reveal” the snowflake patterns. If hanging in a window, little ones can watch the striking changes in contrast as lighting changes throughout the day.