Math 3 Homework 12

1

Compare expressions (<, >, =):

$7 \times 7 \ldots 5 \times 9$ $\quad$ $25 + 25 + 25 \ldots 11 \times 7$

$4 \times 9 \ldots 5 \times 6$ $\quad$ $4 \times 7 \ldots 3 \times 9$

$4 \times 9 \ldots 5 \times 6 + 5$ $\quad$ $11 \times 4 \ldots 6 \times 6 + 5$

$3 \times 8 \ldots 4 \times 4 + 8$ $\quad$ $12 + 12 + 12 + 12 \ldots 8 \times 5 + 8$

2

Mark two distinct points A and B on the page. Choose additional points C, D, E, so that you will get the following triangles (Draw the triangles with different colors):

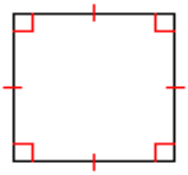
a) ΔABC- a right triangle

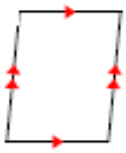
b) ΔABD - an obtuse triangle

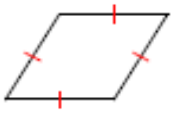
c) ΔABE - an acute triangle

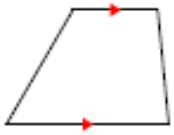
3

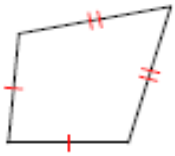
State all possible names for each figure below

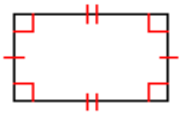












HW 12 Perimeter. Parentheses. Equations

4

a) Use any 3 of these digits: 1, 2, 3 and 4 in the spaces below to make the answer 72.

□□ × □ = 72

b) Use any 3 of these digits: 1, 2, 3 and 4 in the spaces below to make the largest possible answer.

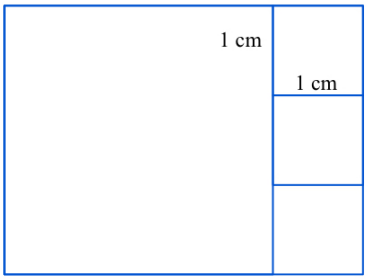
□□ × □ = (is as large as possible)

c) Use any 3 of these digits: 1, 2, 3 and 4 in the spaces below to make the smallest possible answer.

□□ × □ = (is as small as possible)

5

The rectangle consists of the squares. The side of the small square is 1 cm.
Find a perimeter of the rectangle.



_____

_____

_____

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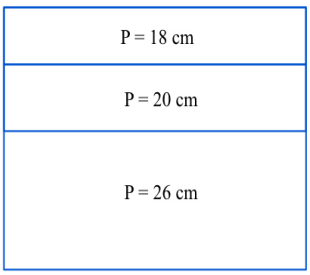
6

The square was divided on 3 rectangles with given perimeters (see the drawing). Find the perimeter of the square



_____

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_____

7

Long multiplication with regrouping

39 × 5 = 57 × 6 = 93 × 7 =

8

Solve for x and check your answers:

$x + (25 - 14) = 10 + 29$

$81 - x - 11 = 25 + 13$

9

The principal of a school with 484 students collected the information about the numbers of students who wear glasses. All results were entered into the table below:

	Always wear glasses	*Sometimes wear glasses*	*Never wear glasses*
Boys	40		161
Girls	36	55	144

a) Find the number of boys who *sometimes* wear glasses _____

b) How many of the students wear glasses *sometimes*? _____

c) How many of the students *never* wear glasses? _____

d) Are there more boys or girls in the school? _____

e) How many of the students wear glasses *sometimes*? _____

f) How many of the students *never* wear glasses? _____

g) Are there more boys or girls in the school? _____

10

What number does n represent in each equation below?

$30 + n = 130$ $n + 5 = 35$ $n - 3 = 67$

n =_____ n =_____ n =_____

11

Evaluate each expression below when $n = 20$

$15 + n =$ $33 - n =$ $n \times 4 =$ $2 \times 4 + n =$

HW 12 Perimeter. Parentheses. Equations

12

Evaluate an expression $9 \times a + 3$ for each value of a:

$if\ a = 9$ _____

$if\ a = 5$ _____

if $a =\ 20$ _____

13

a) While helping their mother to unload a dishwasher, Victoria put 5 plates on each of 3 shelves of the kitchen cabinet and Julia put 4 plates on the each of 3 shelves. How many plates did both of them put in the kitchen cabinet?

_____

_____

_____

b) James has made 10 origami cranes. Tom, Mary and Nick have each made as many origami cranes as James. How many origami cranes all four children made together?

_____

c) Kathy had a piece of the ribbon and she cut 9 meters from it. The remaining piece of the ribbon is 5 times as long as the piece that was cut off. How long is the remaining piece? _____
How long was the original ribbon? _____

14

Open parentheses and simplify the expressions:

300 – (a + b) =_____ 300 – (a + 2) + (b – 100) =_____

29 – (5 + b) = _____ 29 – (5 + a) + (a + 15) =_____

70 – (b – a) = _____ 70 – (2 – 1) – (c – d) = _____

65 – (a + b + 5) =_____ 65 – (d + 5 - a) + (d – a + b) = _____

15

Solve for *x:*

$(35 - x) + 45 = 90$

_____

_____

_____

_____

_____

$(x + 351) - 290 = 410$

_____

_____

_____

_____

_____

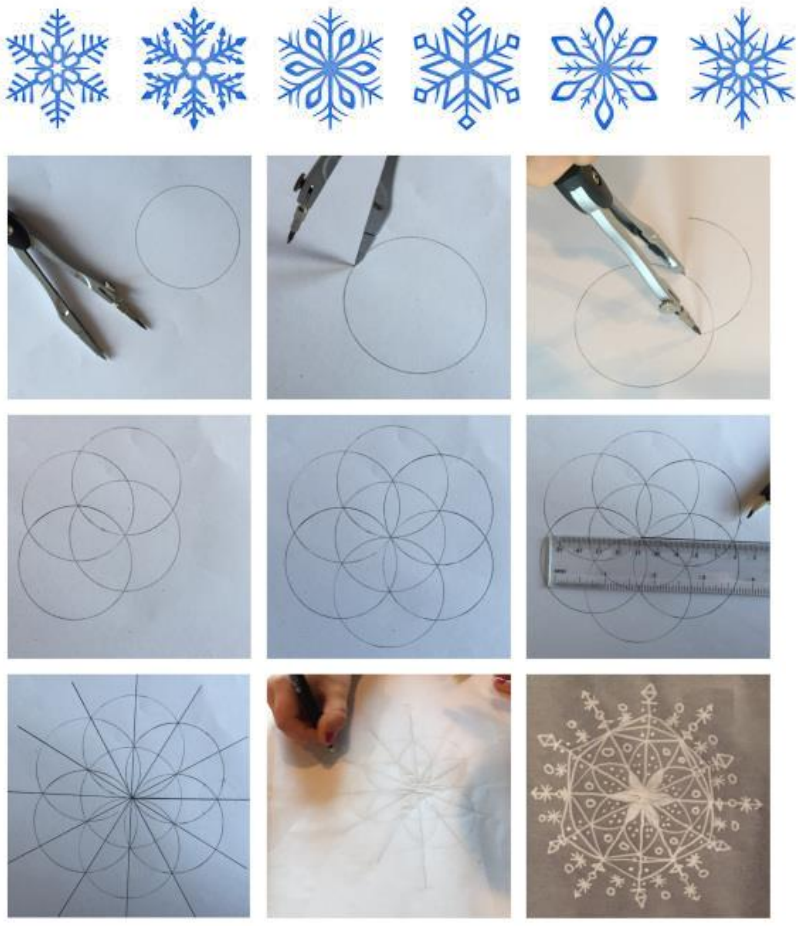
HW 12 Perimeter. Parentheses. Equations

16

A pharmacy has an old balance scale, which has only two measuring weights: 30 grams and 5 grams. A pharmacist has to divide 300 grams of powder medicine into 3 small bags – 150 gram in the 1st bag, 100 grams in the 2nd bag and 50 grams in the 3rd bag. How can he do it if he can only weigh 3 times?

17

Work on your snowflake pattern. Instructions below!



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 intersections 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 a snowflake by making sure you go all the way around the snowflake with individual detail repeating the pattern.
- Remove from template and hang in a window or overlay on dark construction paper to "reveal" the snowflake patterns. If hanging in a window, you can watch the striking changes in contrast as lighting changes throughout the day.
- *PLEASE SUBMIT THE PICTURES OF YOUR SNOWFLAKES!*

Please don't forget to complete the multiplication exercise! Are you getting good at it?

18

1) Put the timer on for three minutes and solve as many as you can!
2) Take a color pencil or pen and complete the rest.

HAVE FUN! HAPPY HOLIDAYS TO YOU AND YOUR FAMILY!