EXPLORING RECTANGLES on a graph grid   Name_____ Partner_____

by Joe Barile 2018, free to reproduce

Activity 1 On the *graph* draw all the *rectangular* shapes which have 24 squares inside of each or an *area* of 24.   (See the example of a 1x24 rectangle shape labeled ABCD.) Now draw a 2X12 rectangle in the graph and label it EFGH. Draw and label two other different-sized rectangles which have 24 squares inside (same areas) and label them IJKL and MNOP.

Activity 2   (a) Tell your teacher of a quick way to determine how many squares inside of each rectangle (its area) without counting each square. (b) Are the *lengths* and *widths* of each rectangle factors of 24. Explain.

Activity 3   Now find the distances around all four rectangles, *perimeters (P),* show your work, and label like this:

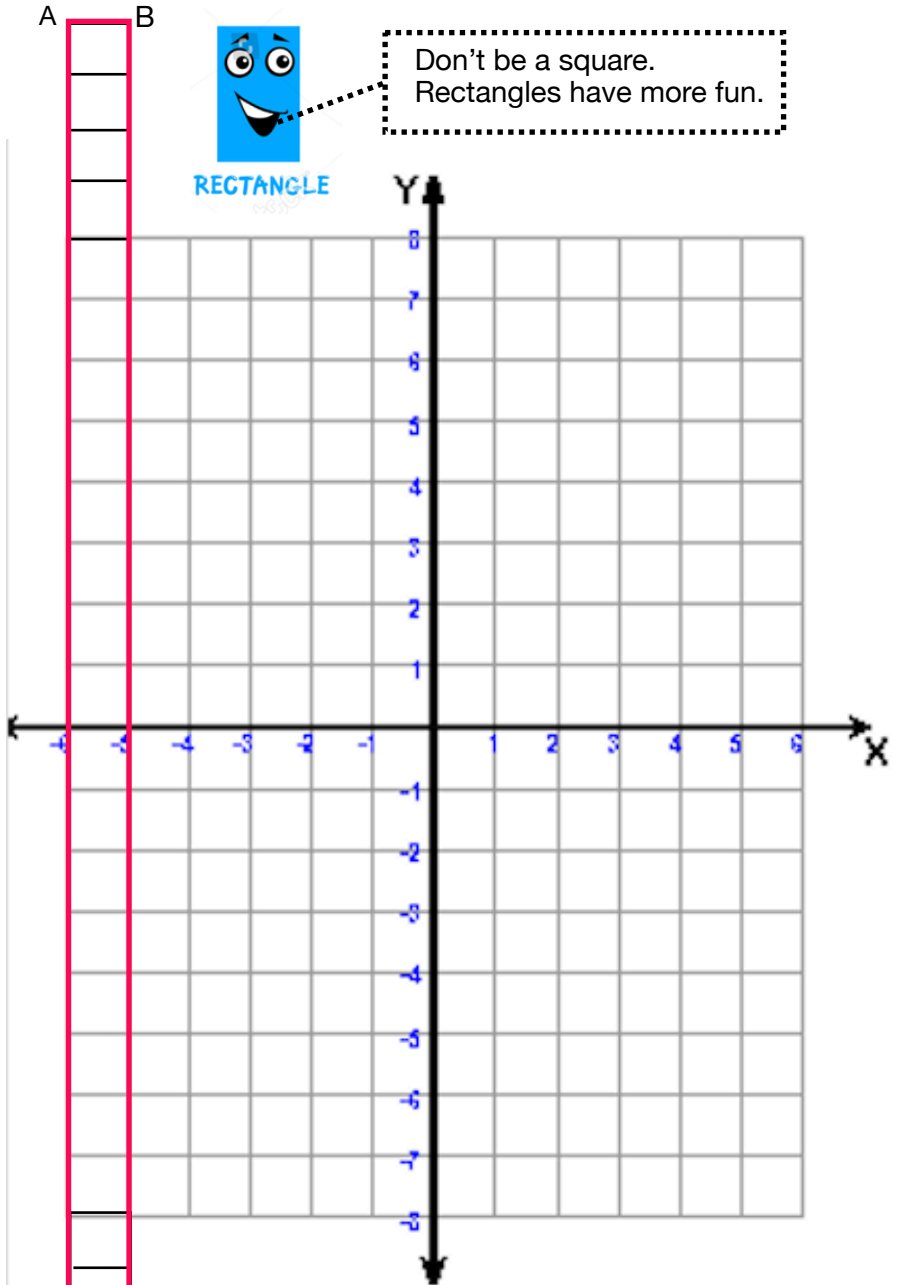Perimeter (P) of rectangle ABCD = *1+24+1+24 = 50 units*

P of rectangle EFGH =

P of rectangle IJKL =

P of rectangle MNOP =

Activity 4   If you know how to read points on a graph, write the co-ordinates of all corners of the other two rectangles. For example, in rectangle ABCD, A=(-6,12), B=(-5,12), C=(-6,-12), and D=(-5, -12).

In rectangle EFGH: E = (,   )

F = (,   )   G = (,   )

A ▢ B

RECTANGLE

Don't be a square. Rectangles have more fun.

In rectangle IGJK: I = (,   )

G = (,   )   J = (,   )

C   D   K = (,   )   (Answers may vary.)

Activity 5   Looking at the rectangular shapes which have the same areas but different perimeters, tell which shapes if moved around would make the best door, the best serving plate or cookie sheet, the best bowling alley, and the best lap pool. Which is the least useful shape. Give your reasons. For example, "I think shape ABCD is too narrow for a door, a pan, a bowling alley, or a lap pool." Tell about the other shapes on the back of this paper. **WHEN YOU ARE DONE: 1) Check your work with your partner and 2) Study for an oral or written quiz from your teacher to get your one, two, or three star rating on these activities here. -> _____ star rating by _____**