

Monday, February 11, 2019

• Warm-up $d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

Equation
 $y = mx + b$

- Calculate the distance and the slope between the two given points: $(-4, 3)$ and $(2, -1)$

x_1, y_1 x_2, y_2

Slope = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{-1 - 3}{2 - (-4)}$

$d = \sqrt{(-1 - 3)^2 + (2 - (-4))^2}$

$3 = -\frac{2}{3}(-4) + b$

$d = \sqrt{(-4)^2 + (6)^2}$

$3 = \frac{8}{3} + b$

$y = -\frac{2}{3}x + \frac{1}{3}$

$\frac{-4}{6} = -\frac{2}{3}$

$d = \sqrt{16 + 36} = \sqrt{52} \approx 7.211$

$\rightarrow 2\sqrt{13}$

$\frac{8}{3} - \frac{8}{3} = b$
 $\frac{1}{3} = b$

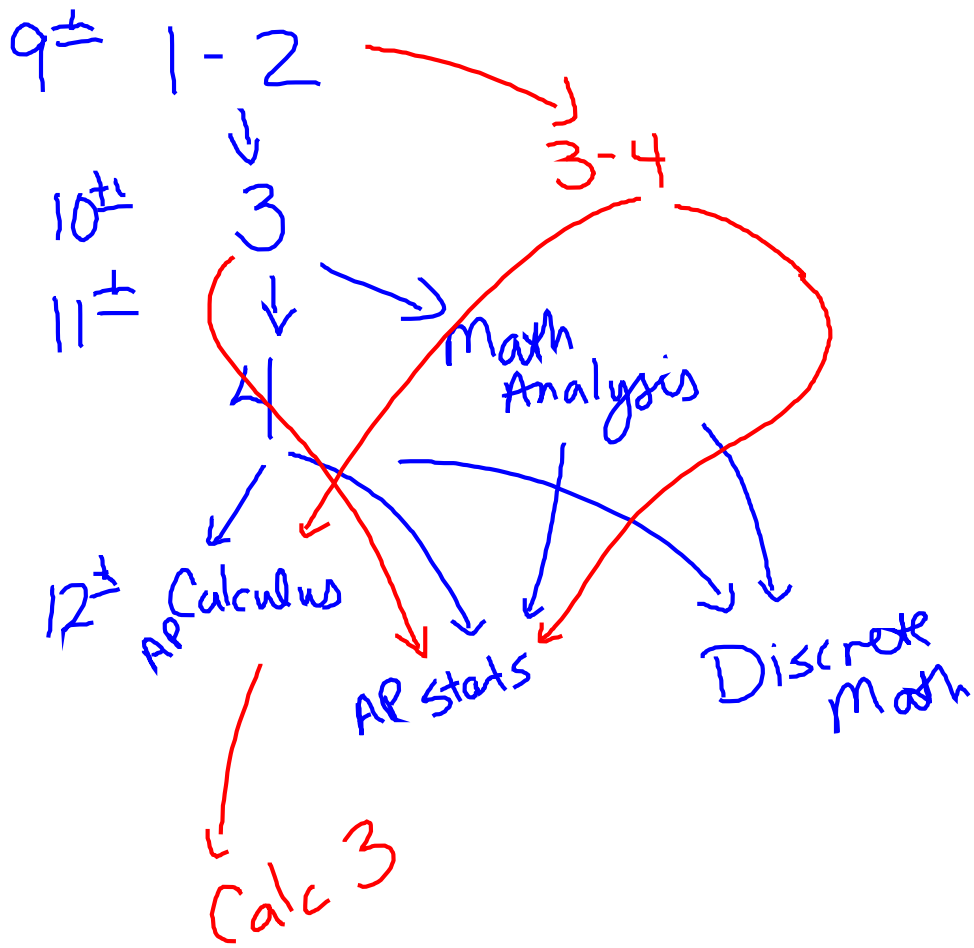
- Group Challenge

Objectives:

Content: I will apply the distance formula to coordinates to determine the area and perimeter of polygons.

Social: I will work well with my group, doing my fair share of the work.

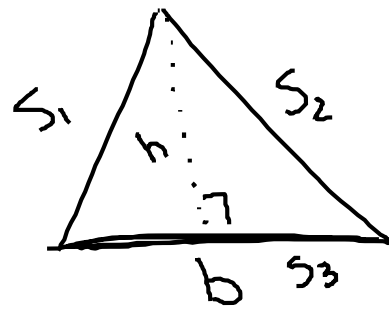
Language: I will explain my reasoning clearly verbally to my group members using correct vocabulary.



Area + Perimeter

the space inside

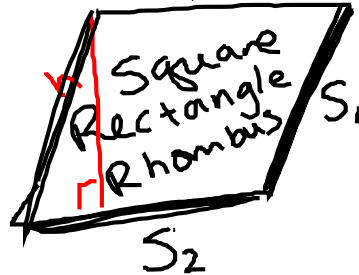
the distance around the outside



$$\text{Area} = \frac{b \cdot h}{2}$$

$$\text{Perimeter} = S_1 + S_2 + S_3$$

Parallelogram



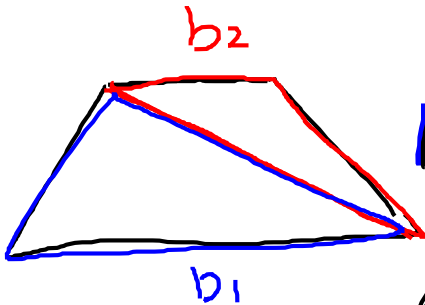
$$A = b \cdot h$$

$$P = 2S_1 + 2S_2$$

$$S_1 + S_1 + S_2 + S_2$$

b, h, Side length

$$d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$$



$$A = \frac{1}{2} b_1 h + \frac{1}{2} b_2 h$$

$$A = \frac{1}{2} h (b_1 + b_2)$$

$$A = \frac{h(b_1 + b_2)}{2}$$

Challenge

1. Create the following figures:
 - a. $\triangle ABC$ with $A(-7, 19)$, $B(-15, 7)$ and $C(-2, 7)$
 - b. Rectangle $DEFG$ with $D(2, 12)$, $E(12, 18)$, $F(15, 13)$, and $G(5, 7)$
 - c. Square $HJKL$ with $H(-9, 7)$, $J(3, -2)$, $K(8, 14)$, and $L(-4, -19)$
2. Use coordinate geometry to find the perimeter and area of each figure. You may not use a ruler or any other measuring device except to measure the scale of the grid paper you are using.
3. Show all of your work in solving this challenge.

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