MPM 1D6 Name: _____

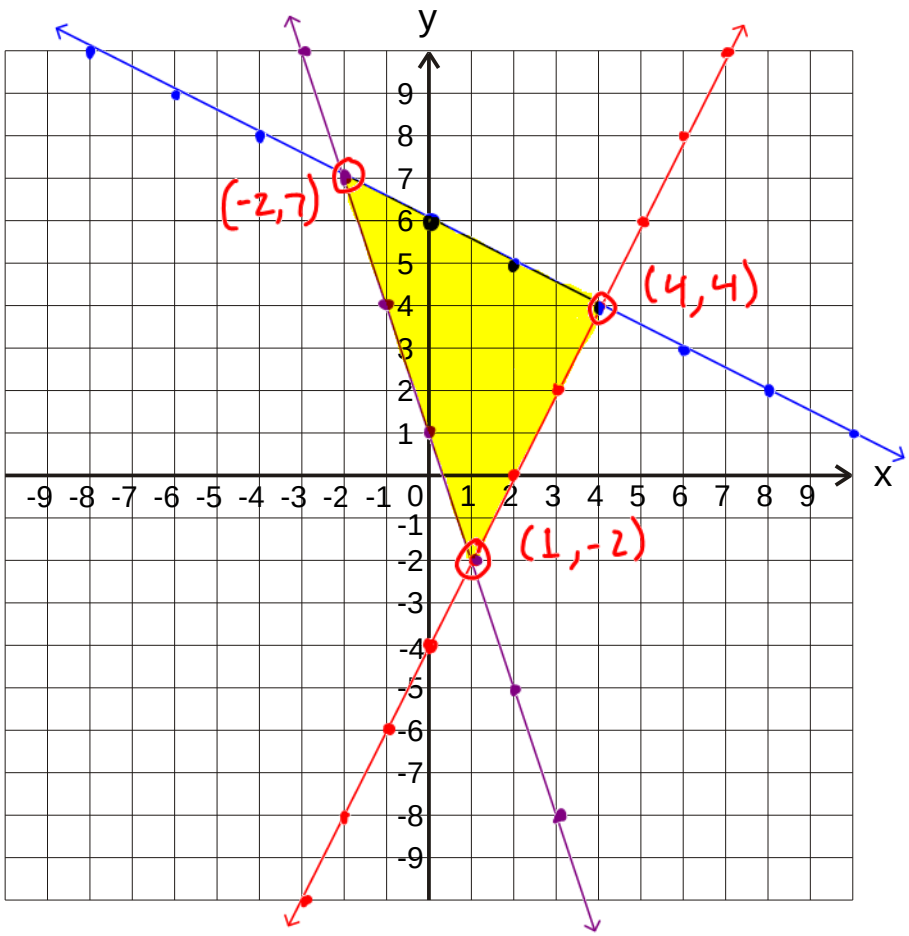
Performance Task – Graphing to find the vertices of a triangle

1. The equations of the three sides of a triangle are:

$$y = 2x - 4, \quad y = -\frac{1}{2}x + 6 \text{ and } y = -3x + 1.$$

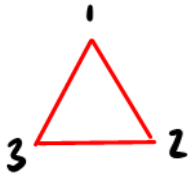
A B C

Graph these lines of the grid below and determine the coordinates of the vertices of the triangle.

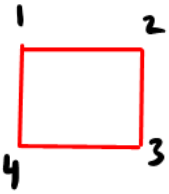


The coordinates of the vertices of the triangle are: (-2,7) , (4,4) , (1,-2) .

A point at which sides of an angle intersect or meet the "corner point"



A triangle has 3 vertices



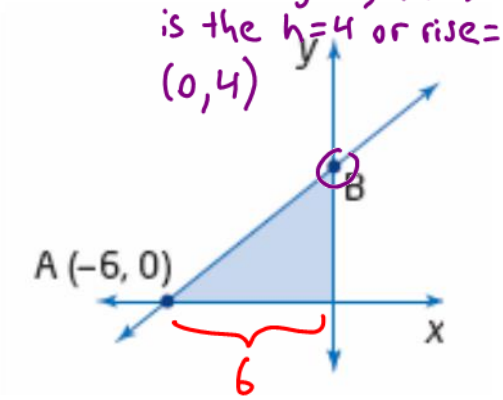
A square has 4 vertices

MPM 1D6 Name: _____

Performance Task – Math Contest Question

The area of the shaded region is 12 square units.

1. What is the slope of the line through AB?
2. What is the coordinate of point B?



graphically the point is on the y-axis, ∴ it is $y=0$, and x is the $h=4$ or rise=4

(1) $A_{triangle} = \frac{b \times h}{2}$

$\times 2 \quad 12 = \frac{6 \times h}{2} \times 2$

$2(12) = 6 \times h$

$24 = 6 \times h$

$\frac{24}{6} = h$

$4 = h$

(2) $Slope = m = \frac{rise}{run}$

$m = \frac{4}{6}$

$m = \frac{2}{3}$

(3) $m = \frac{2}{3}$

$A(-6,0) \quad B(x,4)$ ← unknown

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$\frac{2}{3} = \frac{4-0}{x-(-6)}$

$\frac{2}{3} = \frac{4}{x+6}$

cross multiply

$2(x+6) = 4(3)$

distributive property

$2x + 12 = 12$

$2x = 12 - 12$

$2x = 0$

$x = \frac{0}{2}$

$x = 0$

∴ Point B is $(0, 4)$

$x \quad y$