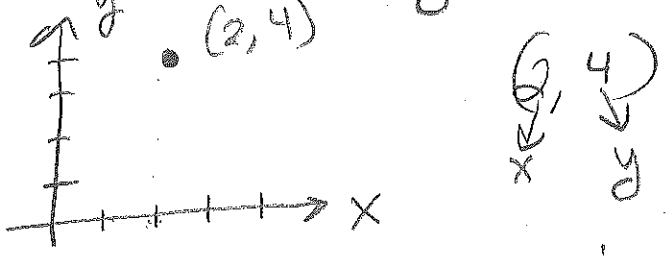
Cornell Notes	Topic/Objective: Geometry	Name:
AVID Decades of College Dreams		Class/Period: 5
	Review for final	Date: 1/6/16

Essential Question:

Questions:

Notes

* Coordinate Geometry.



(x, y) is a coordinate point

if you have 2 coordinate points

ex) (1, 2) (5, 6)

we can find the distance between those coordinate points 2 ways.

1. distance formula
2. Pythagorean Thm

Distance formula

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

determine x_1, y_1, x_2, y_2 from given coordinate pairs

Summary:

(1, 2) (5, 6)

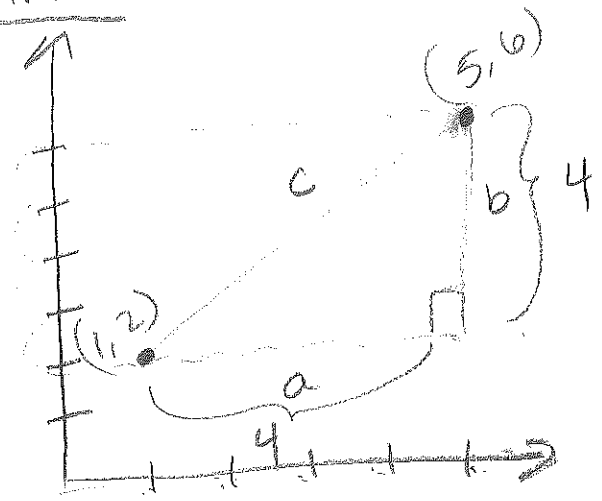
x_1, y_1 x_2, y_2

$$d = \sqrt{(5-1)^2 + (6-2)^2}$$

$$= \sqrt{4^2 + 4^2}$$

$$= \sqrt{16+16} = \sqrt{32} \approx 5.65$$

Pyth thm



plot the coordinate points

(1,2), (5,6)

$a^2 + b^2 = c^2$

$4^2 + 4^2 = c^2$

$16 + 16 = c^2$

$32 = c^2$

$\sqrt{32} = \sqrt{c^2}$

$c \approx \boxed{5.65}$

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ex) find distance between (-2, -4) and (3, 7)

① distance formula

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

(-2, -4) (3, 7)

x_1 y_1 x_2 y_2

$= \sqrt{(3 - (-2))^2 + (7 - (-4))^2}$

$= \sqrt{5^2 + 11^2}$

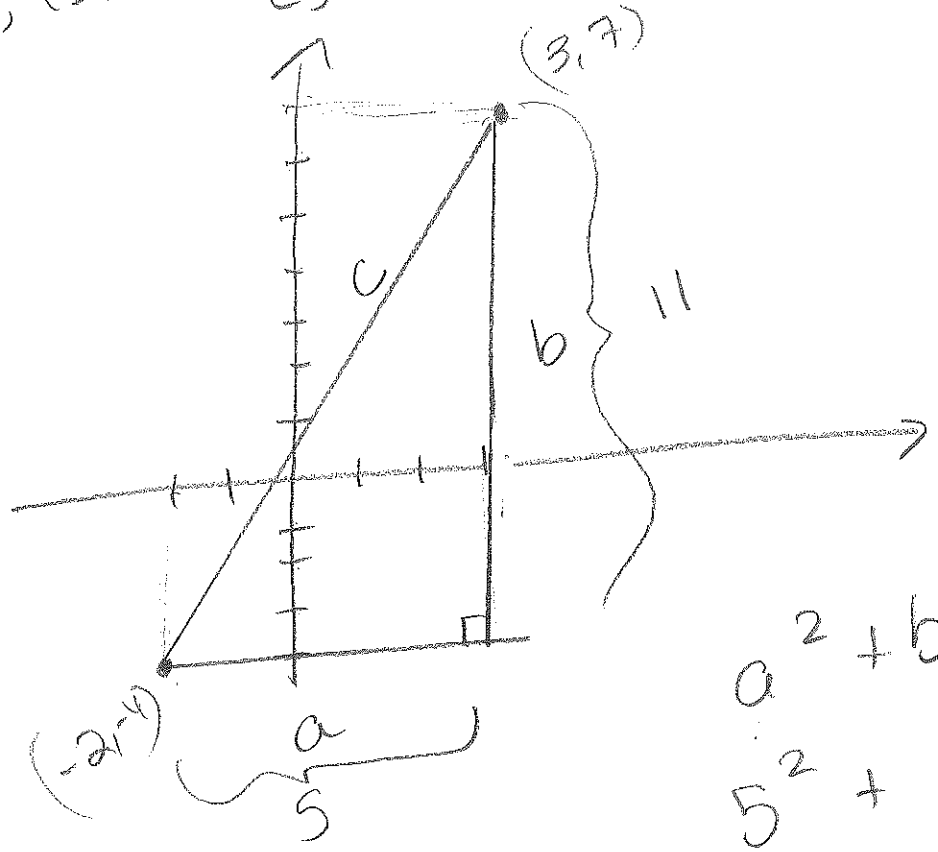
$= \sqrt{25 + 121}$

$= \sqrt{146} \approx \boxed{12.08}$

② Pyth thrm

a) plot points
b) draw the right Δ
c) label a, b, c

(-2, -4), (3, 7)



$a^2 + b^2 = c^2$

$5^2 + 11^2 = c^2$

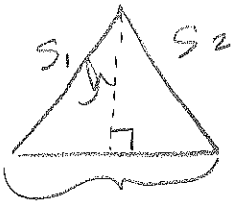
$25 + 121 = c^2$

$146 = c^2$

$\sqrt{146} = \sqrt{c^2}$

$c \approx 12.08$

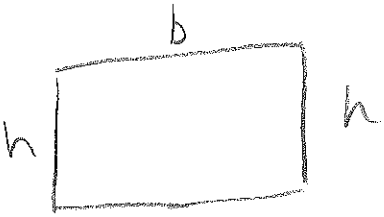
Solids : Area, Perimeter, Surface area, Volume



Triangle

$A = \frac{1}{2}bh$ unit^2

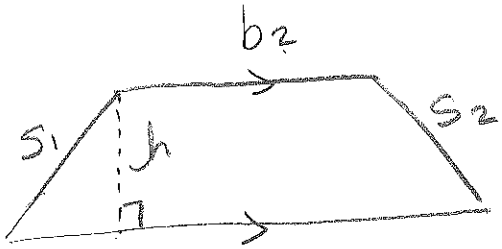
$P = s_1 + s_2 + s_3$ unit



square / rectangle

$A = bh$

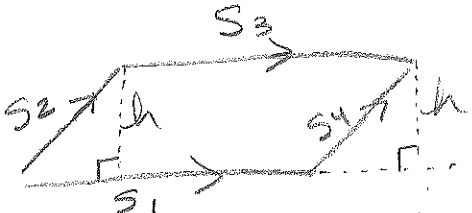
$P = b + b + h + h$
$= 2(b) + 2(h)$



Trapezoid

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

$P = b_1 + b_2 + s_1 + s_2$



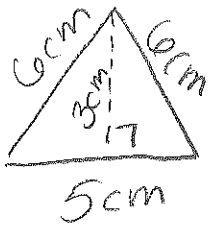
parallelogram

$A = bh$

$P = s_1 + s_2 + s_3 + s_4$

★ note: don't confuse the height for a side

ex) Solids

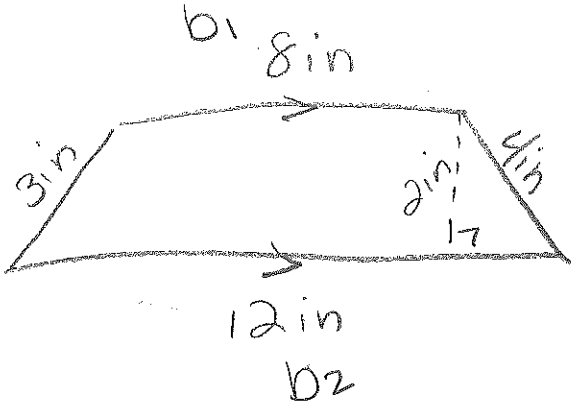


$A = \frac{1}{2}bh$

$= \frac{1}{2}(5)(3)$

$= \frac{1}{2}(15) = 7.5\ cm^2$

$P = 6 + 6 + 5 = 17\ cm$

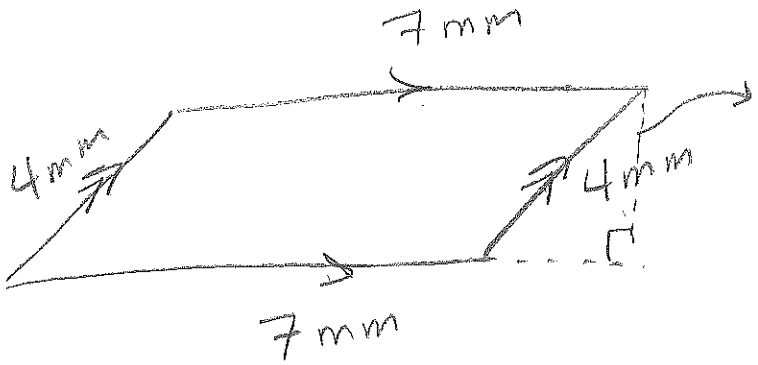


$A = \frac{1}{2}(b_1 + b_2)h$

$= \frac{1}{2}(8 + 12)(2)$

$= 10(2) = 20\ in^2$

$P = 8 + 4 + 12 + 3 = 27\ in$



$A = bh$

$= (7)(3) = \underline{21\ mm^2}$

$P = 7 + 4 + 7 + 4$

$= \underline{22\ mm}$

Volume + SA

first, identify your shape

is it a Prism or Pyramid?

Prism will have rectangles or squares for side

there will be 2 bases that are identical

Pyramids have Δs as sides

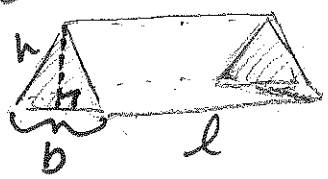
have apex

have 1 base: triangle, square, rectangle - almost any polygon

SA: unit^2 V: unit^3

PRISMS

Triangular Prism:

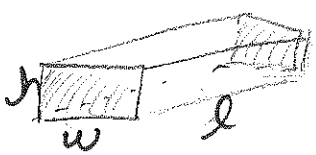


SA: Area of 2 base + Area of the 3 side rectangles

$= 2\left(\frac{1}{2}bh\right) +$ Area 3 rectangles

$V = \underbrace{\left(\frac{1}{2}bh\right)}_{B} \cdot l$

Rectangular Prism



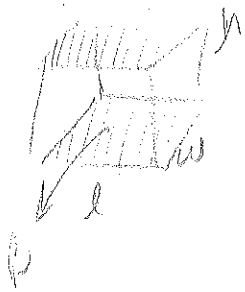
SA = Area of 2 bases + Area 4 side rectangles

$V = \underbrace{(hw)}_{B} \cdot l$

*the length of a prism is the distance between the 2 bases

Solids (continued)

Cubic/square prism



SA = Area base (x2) + Area of the 4 sides. ($unit^2$)

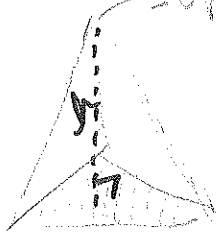
[6 sides total]

$V = (lw) \cdot h$ ($unit^3$)

B

Pyramids

triangular pyramid



[4 sides]

SA = Area base + Area 3 sides

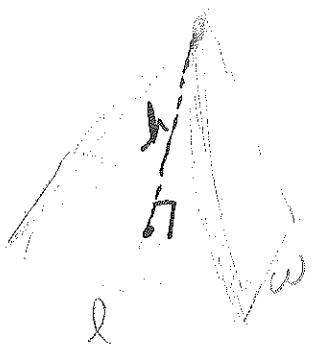
$(\frac{1}{2}bh) \rightarrow B$

$V = \frac{1}{3}Bh$

h = height of Pyramid drops from the apex to the base @ a 90°

Rectangular Pyramid

[5 sides]



$SA = \underbrace{\text{Area base}}_{B = lw} + \text{Area of 4 sides}$

$V = \frac{1}{3}Bh = \frac{1}{3}\underbrace{lw}_{B}h$

B = area of base

Square Pyramid

$SA = \text{Area base} + \text{Area of 4 sides}$ (which have the same area)

$V = \frac{1}{3}Bh$

$= \frac{1}{3}l \cdot w \cdot h$