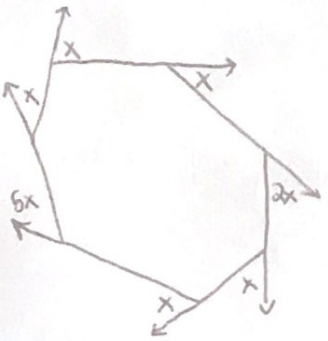
Unit 7 - Polygons COVID-19 Review

① Find the value of x in each figure

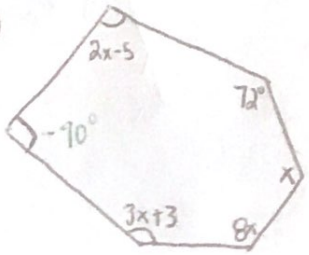
a)



$x+x+x+2x+x+x+5x=360$

$\frac{12x=360}{12}$ → $x=30$

b)



$180(6-2)=720$

$90+2x-5+72+x+8x+3x+3=720$

$14x+160=720$

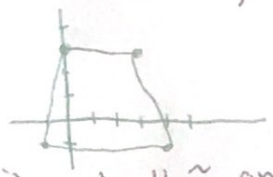
$-160 \quad -160$

$\frac{14x=560}{14}$ → $x=40$

② what polygon is described/created

a) with vertices (-1,-1), (0,3), (3,3), (4,-1)

graph:



check slopes: $\frac{\text{rise}}{\text{run}}$

check lengths:

$1^2+4^2=x^2$

$17=x^2$

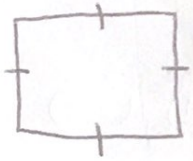
$x=\sqrt{17}$

Iso Trap

b) 4 ≅ sides + 4 ≅ angles

square

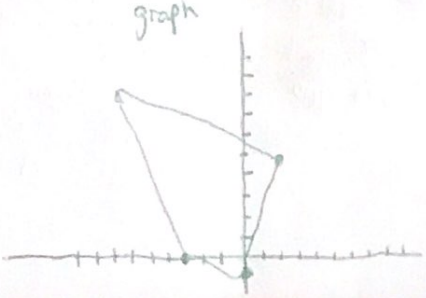
c)



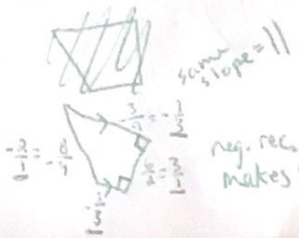
4 ≅ sides
no idea angles → rhombus

d) (-3,0), (0,-1), (2,5), (-7,8) are vertices

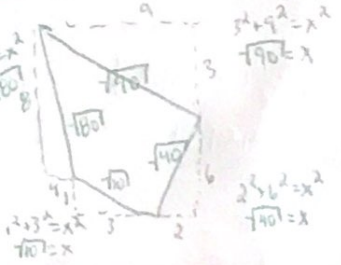
graph



check slopes



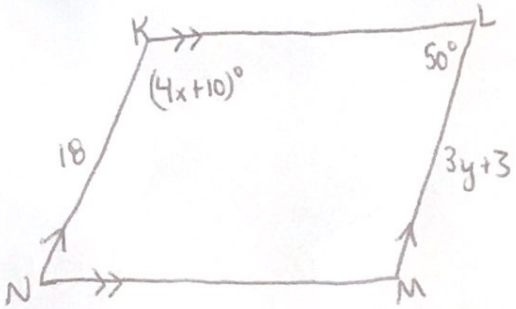
check distances



Trapezoid

Unit 7- Polygons COVID-19 Review

③ Find x, y & m∠M



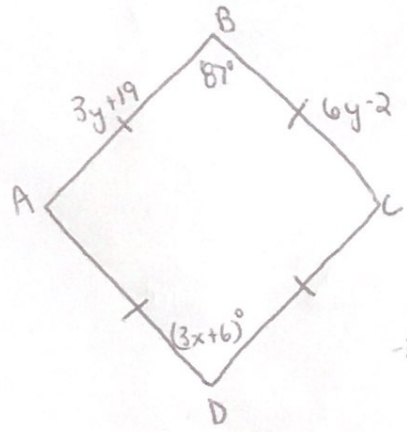
x = 30
y = 5
m∠M = 130°

$4x + 10 + 50 = 180$
$\frac{4x}{4} = \frac{120}{4}$
$x = 30$

$18 = 3y + 3$
$\frac{15}{3} = \frac{3y}{3}$
$y = 5$

$m\angle M = m\angle K$
$= 4(30) + 10$
$= 130$

④ Find x, y & CD



x = 27
y = 7
CD = 40

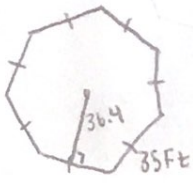
$3y + 19 = 6y - 2$
$-3y + 2 \quad -3y + 2$
$\frac{21}{3} = \frac{3y}{3}$
$y = 7$

$87 = 3x + 6$
$-6 \quad -6$
$\frac{81}{3} = \frac{3x}{3}$
$x = 27$

$CD = AB$
$= 3(7) + 19$
$= 40$

⑤ Find the area & perimeter of the shapes.

a)

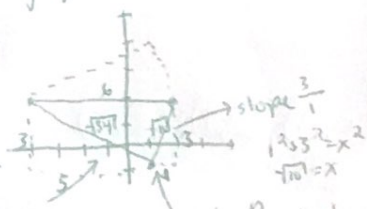


Perimeter:
$7(35) = 245\ Ft$

Area:
$7\left[\frac{1}{2}(35 \cdot 36.4)\right]$
$= 4459\ Ft^2$

b) Vertices: (-4,2), (1,-1), (2,2)

graph:



slope $-\frac{3}{5}$

angle? check slopes not 90°

perimeter:
$6 + \sqrt{34} + \sqrt{10}$
15 units

Area: ~~collect~~ ~~to~~ ~~memorize~~.
Don't worry about finding this. Know how to find area of a △ though.

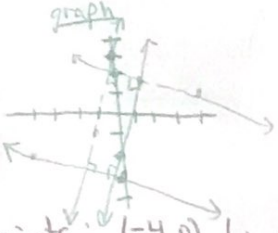
Unit 7- Polygon COVID-19 Review

⑥ classify the shape using slope + distance

a) contained by lines: $y=4x+3$, $y=-\frac{1}{4}x+2$, $y=4x-2$, $y=-\frac{1}{4}x-3$

parallel, 90°, 90°, parallel

graph:

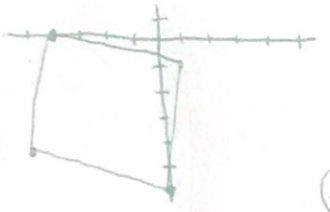


4 sides ≠

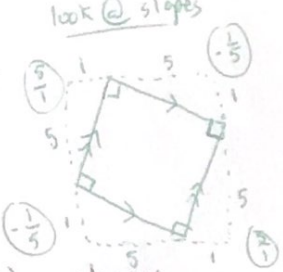
rectangle

b) points: (-4,0), (1,-1), (-5,-5), (0,-6)

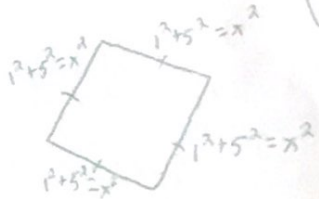
graph:



look @ slopes



check lengths



square

⑦ what defines the following shapes

- Quadrilateral — closed shape with 4 straight sides
- Parallelogram — quadrilateral with 2 sets of ∥ sides
- Rhombus — parallelogram with 4 ≅ sides
- Kite — Quadrilateral with 1 set of ≅ adjacent sides
- Rectangle — parallelogram with 4 right angles
- Trapezoid/Iso trap — Quadrilateral with 1 set of parallel sides
- square — Parallelogram that is a rectangle + rhombus