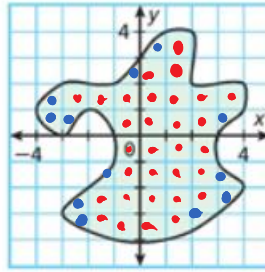


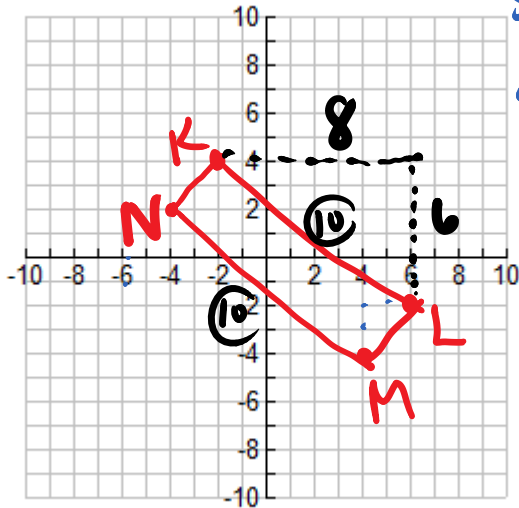
1. Estimate the area of the irregular shape.

31 whole!
12.5 Half

$31 + 6.5 = 37.5 \text{ u}^2$



2. Find the area and perimeter of the polygon with vertices K(-2, 4), L(6, -2), M(4, -4) and N(-4, 2).



slope $\overline{KN} = \frac{2}{2} = 1$
 slope $\overline{LM} = \frac{-2}{2} = -1$
 " $\overline{KL} = \frac{-6}{8} = -\frac{3}{4}$
 " $\overline{NM} = \frac{-6}{8} = -\frac{3}{4}$

• opp sides // b/c same m.
 • 90° b/c opp recip. slopes

$8^2 + 6^2 = c^2$
 $64 + 36 = c^2$
 $100 = c^2$
 (triple)

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

bpp sides
 \approx
 \equiv



$P = 2 \cdot 10 + 2 \cdot 2\sqrt{2}$
 $P = 20 + 4\sqrt{2}$
 $A = 10 \cdot 2\sqrt{2}$
 $A = 20\sqrt{2}$

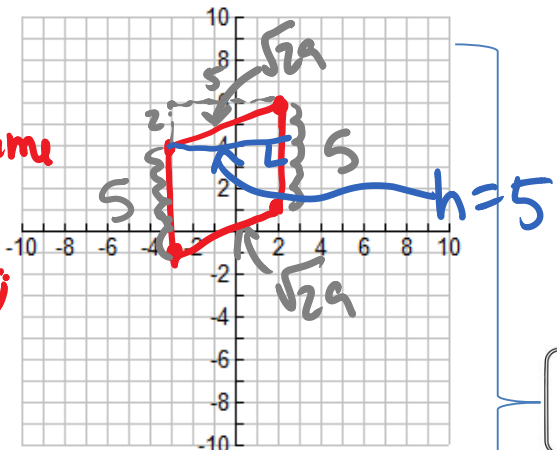
3. We are responsible for building a dog playpen and are using the grid below (in feet). The corner of the play area are P(-3, 4), L(2, 6), A(2, 1) and Y(-3, -1). We will fence in the playpen and cover the entire area with astroturf.

a) What is the shape of the playpen? (Show Work!)

$2^2 + 5^2 = c^2$
 $4 + 25 = c^2$
 $\sqrt{29} = c$

• Slopes of opp. sides same
 \Rightarrow // sides

• BUT not opp. recip.;
 so parallelogram.



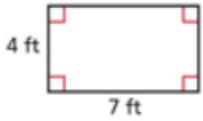
b) How many feet of fencing should we purchase to keep the puppies inside the playpen?

Find perimeter! $P = 2(5) + 2(\sqrt{29})$
 $= 10 + 2\sqrt{29}$ OR 20.77 ft.

c) How many square feet of astroturf should be purchase for the playpen?

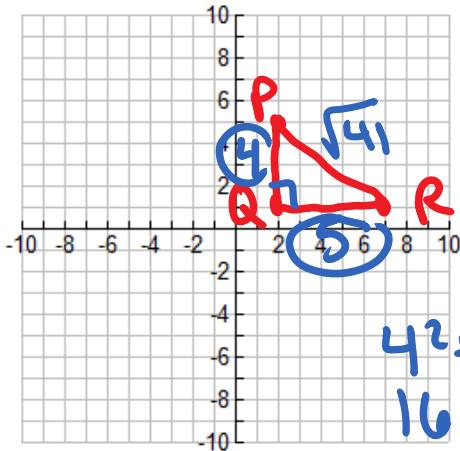
Find area $\Rightarrow A = b \cdot h = 5 \cdot 5 = 25 \text{ ft}^2$

4. The height of the rectangle is tripled. Describe the effect on the area.



The area will be tripled.

5. The base and height of the triangle with vertices P(2, 5), Q(2, 1) and R(7, 1) are tripled. Describe the effect on its area and perimeter.



old per: PERIMETER:

$$4 + 5 + \sqrt{41}$$

$$9 + \sqrt{41}$$

New per: $3(9 + \sqrt{41})$

$$= 27 + 3\sqrt{41}$$

$$4^2 + 5^2 = c^2$$

$$16 + 25 = c^2$$

$$\sqrt{41} = c$$

AREA:

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

$$\frac{1}{2}(5)(4)$$

$$= 10u^2$$

Now for the new area:

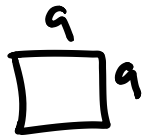
$$(3)^2 \cdot 10$$

$$= 90u^2$$



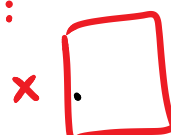
6. A square has a perimeter of 36mm. If the area is multiplied by $\frac{1}{2}$, what happens to the side length?

$$36 \div 4 = 9$$



$$A = 81mm^2$$

New:



$$A = 40.5mm^2$$

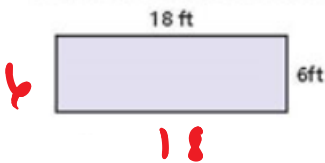
$$A = bh$$

$$40.5 = x^2$$

$$x = 6.36mm$$



7. The base and height of the rectangle are both multiplied by $\frac{1}{4}$. Describe the effect of each change on the PERIMETER and AREA of the given figure.



- Perimeter will be mult. by $\frac{1}{4}$
- Area will be mult. by $(\frac{1}{4})^2 = \frac{1}{16}$

Original Perimeter = 48 ft

New Perimeter = $48(\frac{1}{4}) = \frac{48}{4} = 12ft$

original Area = $6 \cdot 18 = 108ft^2$

New Area = $108(\frac{1}{16}) = \frac{108}{16} = 6.75ft^2$