



$$x^2+y^2+2ax+2ey+f=0$$
$$(x,y) = F(x,y^0)$$
$$a = \pi r^2$$

Welcome back!

Make sure ur rdy2go
when the bell rings!

What have we learned about Δ 's?

- Area formula: $A = \frac{1}{2} bh$
- Right Δ 's: $a^2 + b^2 = c^2$
- 45-45-90: $s, s, s\sqrt{2}$
- 30-60-90: $s, s\sqrt{3}, 2s$
- The Adam & Eve of all polygons
 - You can build any polygon using just Δ 's

What have we learned about problem solving skills?

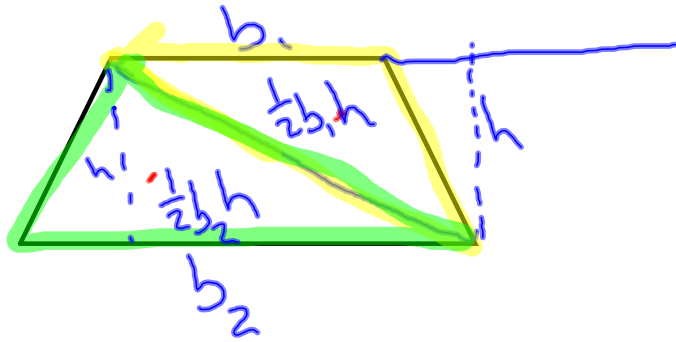
- Inductive Reasoning: detecting patterns, forming conjectures
- Deductive Reasoning: resolve complex problem step by step using tools such as defns, postulates, theorems, etc.
- Rizzles: thinking creatively and out-of-the-box.
- Group-work: brainstorming to solve problems.

Task:

- Put all this together...
- Using what you know about:
 - Triangles
 - Quadrilateral family tree
 - Problem solving...
- Develop a formula for ea of the following:
 - Trapezoid
 - Rhombus
 - Kite



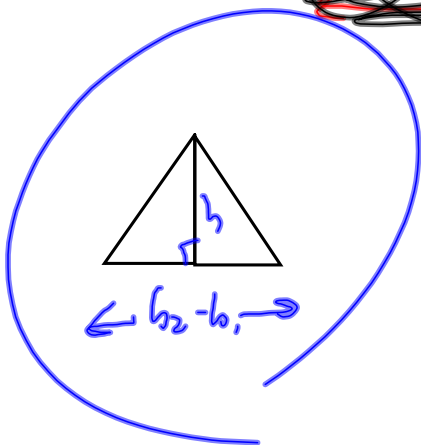
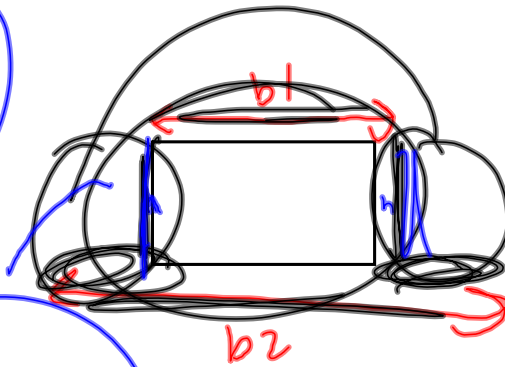
Kavliç
Kuyse-çi



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

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

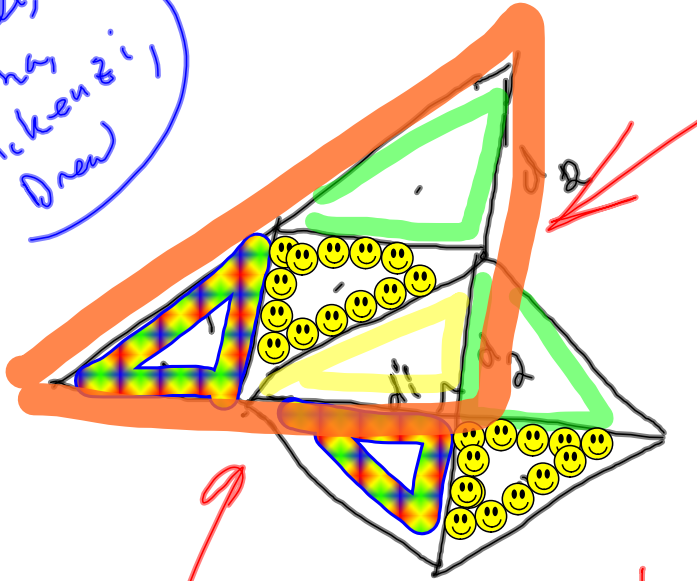
Kavliç
Kuyse-çi



$$b_1 \cdot h$$

$$\frac{(b_2 - b_1) \cdot h}{2}$$

Randall,
Selinas,
Mckenzi,
Drew



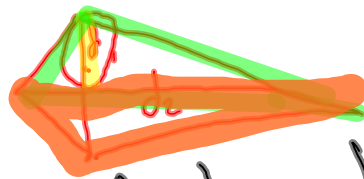
$$d_1 \cdot d_2 = A$$

$$\frac{1}{2} d_1 d_2 = A$$

d_1

$$\frac{1}{2} d_1 d_2$$

Matt,
Ela,
Daniel,
Jacob



$$\frac{1}{4} d_1 \times d_2$$

Special quadrilateral area formulas:

- Trapezoid: $A = \frac{1}{2} h (b_1 + b_2)$ Thm 7-10
 - Rhombus: $A = \frac{1}{2} d_1 d_2$
 - Kite: $A = \frac{1}{2} d_1 d_2$
- } Thm 7-11

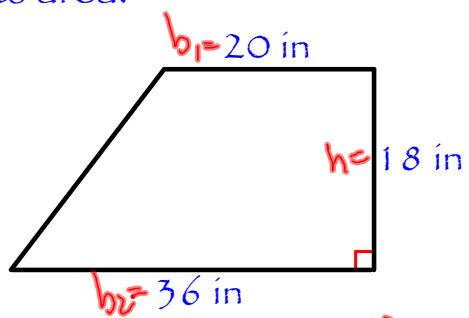
Compare and contrast a rhombus and kite

- Both are quads
- Rhombus parallelogram, kite not
- Both formed from isosceles Δ 's
- Diagonals not \cong for either
- Tweak diagonals of either a little to get the other
- Same area formula

Example 1

A car window is shaped like a trapezoid.

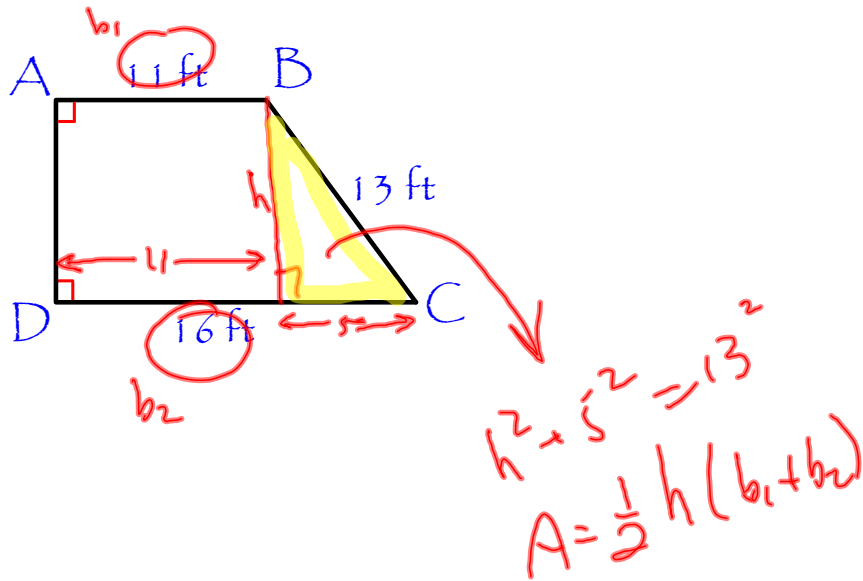
Find its area.



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

Example 2

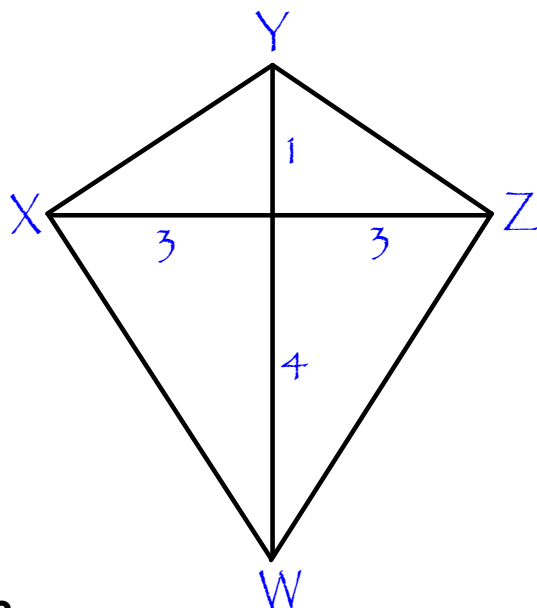
Find the area of ABCD



2

Example 3

Find the area of kite XYZW

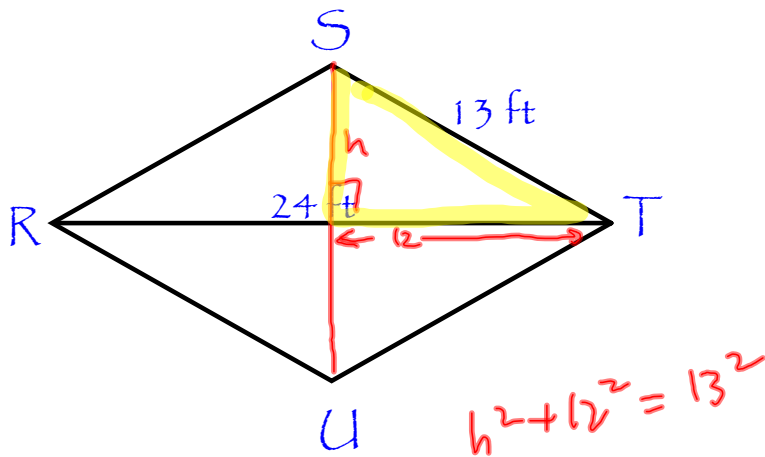


$$d_1 = 1 + 4 = 5$$
$$d_2 = 3 + 3 = 6$$
$$A = \frac{1}{2} (5)(6) = 15$$

3

Example 4

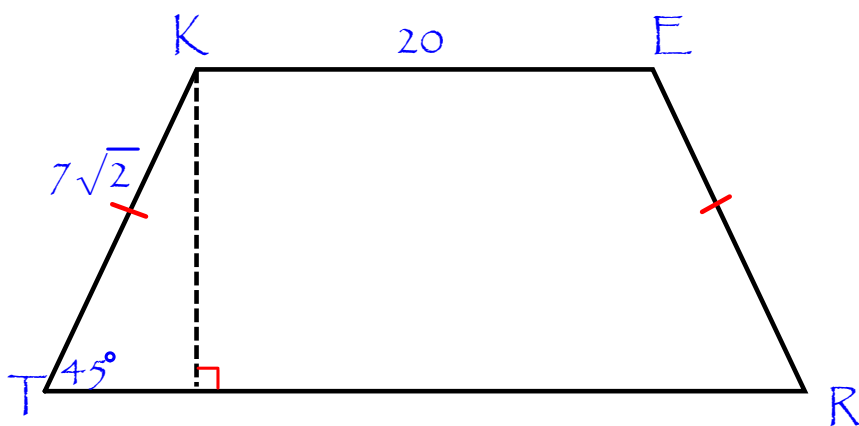
Find the area of rhombus RSTU



4

Example 5

Find the area of trapezoid KERT



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L7-4 HW Problems

Pg 376 #1-21, 25-37 odd

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Pg 376 #1-21, 25-37 odd