

Lesson 10.5- SWBAT to understand and apply properties of the rhombus.

Kick off:

1) Factor: $4x^2 - 15x - 25$ $-100x^2$
 $(4x^2 - 20x)(5x - 25)$ $50 \cdot 2$
 $10 \cdot 10$
 $4x(x-5) + 5(x-5)$
 $(4x+5)(x-5)$ $25 \cdot 4$
 $(4x+5)(x-5)$ $20 \cdot 5$

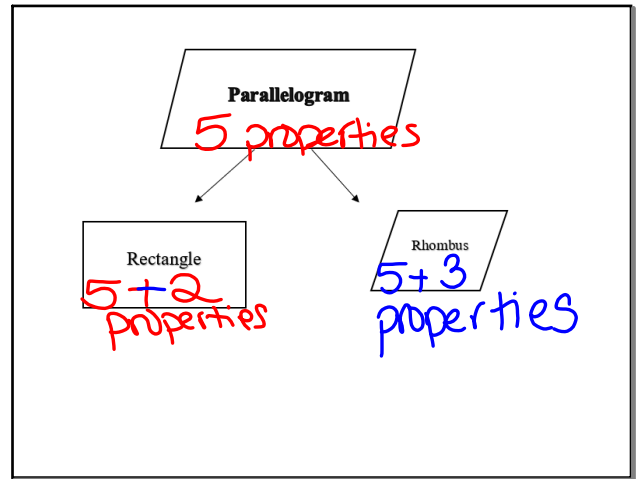
2) Factor: $ax + 3a - bx - 3b$
 $a(x+3) - b(x+3)$
 $(a-b)(x+3)$

3) Solve by factoring: $x^2 - 17x + 16 = 0$
 $(x-1)(x-16) = 0$
 $x-1=0$ $x-16=0$
 $+1+1$ $+16+16$
 $x=1$ $x=16$

4) Solve by quadratic formula: $2x^2 - 7x - 3 = 0$
 $a=2$ $b=-7$ $c=-3$
 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
 $x = \frac{7 \pm \sqrt{(-7)^2 - 4(2)(-3)}}{2(2)}$
 $x = \frac{7 \pm \sqrt{49 + 24}}{4}$
 $x = \frac{7 \pm \sqrt{73}}{4}$

$x^2 - 17x + 16 = 0$
 $x^2 - 1x - 16x + 16$
 $x(x-1) - 16(x-1)$
 $(x-1)(x-16)$
 $x-1=0$ $x-16=0$
 $+1+1$ $+16+16$
 $x=1$ $x=16$

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Properties of a Rhombus:

- ALL of the properties of a parallelogram
 - Opposite sides are **parallel**
 - Opposite sides are **congruent**
 - Opposite angles are \cong
 - Consecutive angles are supplementary
 - Diagonals bisect each other

angles next to each other add to 180°

Cuts into 2 equal halves

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2) ALL sides are congruent

$AB \cong BC \cong DC \cong AD$

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3) The diagonals bisect the angles

Cuts into equal halves.

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4) The diagonals are perpendicular to each other.

form 90° or right angles.

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Classwork/Homework 10.5- SWBAT to understand and apply properties of the rhombus.

1) In rhombus ABCD, $m\angle A = 50$. Find the measure of all the other angles.

Handwritten solution:

$$\begin{array}{r} 180 \\ - 50 \\ \hline 130 \end{array}$$

2) In the rhombus below $m\angle W = 60$ Find the measure of $\angle XZY$

Handwritten solution:

$$\begin{array}{r} 180 \\ - 60 \\ \hline 120 \end{array}$$

$\angle XZY = 60^\circ$

$\frac{1}{2}(120) = 60$

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3) In the rhombus MNOP, diagonal MO = 6, and diagonal NP = 8. Find the perimeter of the rhombus.

Handwritten solution:

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

$$4^2 + 3^2 = x^2$$

$$16 + 9 = x^2$$

$$\sqrt{25} = \sqrt{x^2}$$

$$5 = x$$

Perimeter: $5 + 5 + 5 + 5 = 20$

4) In rhombus ABCD, the diagonals AC and BD intersect at E. $AC = 6y + 4$, $CK = 5y + 9$ and $KJ = 3y - 16$. Solve for y.

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5) In the rhombus DKLM, if $DK = 8$ find KL .

Handwritten solution:

$KL = 8$

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6) In the rhombus DKLM below, $DA = 4x$ and $AL = 5x - 3$. Find DL .

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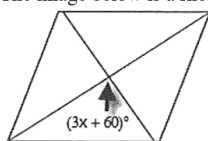
7) Find the measures of each of the numbered angles in the rhombus.

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8) The image below is a rhombus. Solve for value of x.

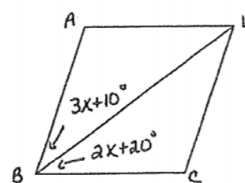
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9) The image below is a rhombus. Solve for value of x.



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10) The image below is a rhombus. Solve for value of x.



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