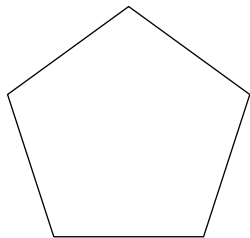


Review Unit 5

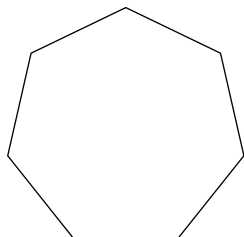
Find the measure of one interior angle in each regular polygon. Round your answer to the nearest tenth if necessary.

- 1) 2) regular 18-gon

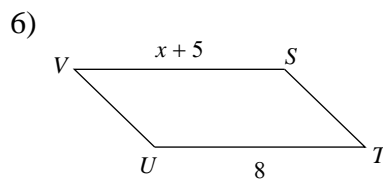
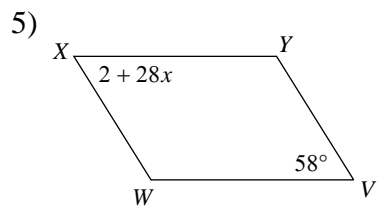


Find the measure of one exterior angle in each regular polygon. Round your answer to the nearest tenth if necessary.

- 3) 4) regular pentagon

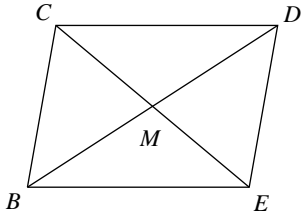


Solve for x . Each figure is a parallelogram.

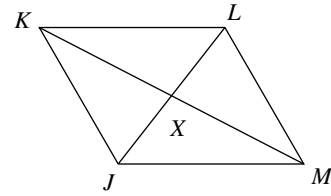


Find the measurement indicated in each parallelogram.

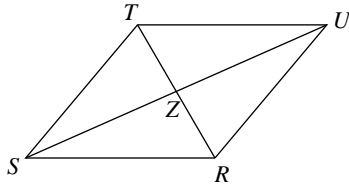
- 7) $CM = 4x - 2$
 $CE = 7x - 1$
 Find CM



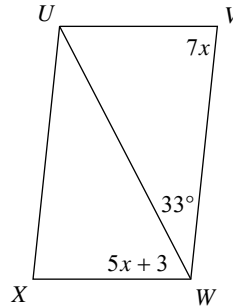
- 8) $KX = -9 + 2x$
 $KM = 3x - 9$
 Find KM



- 9) $SZ = -11 + 2x$
 $SU = 2x + 2$
 Find SU

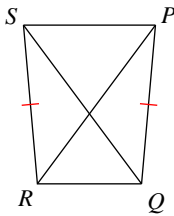


- 10) Find $m\angle V$

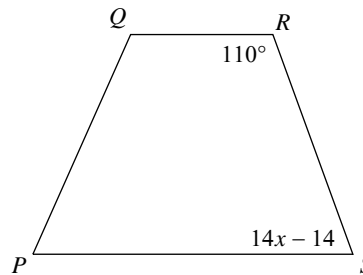


Solve for x . Each figure is a trapezoid.

- 11) $PR = 16$
 $QS = 5x - 14$

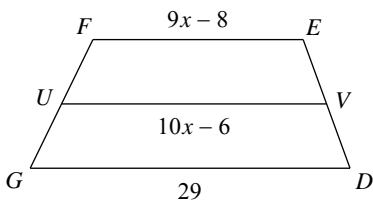


- 12)

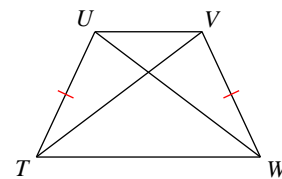


Find the length of the midsegment of each trapezoid.

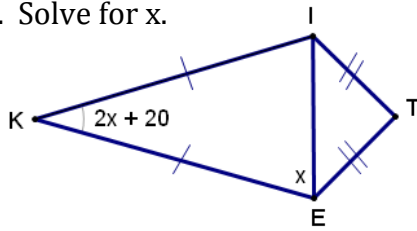
- 13)



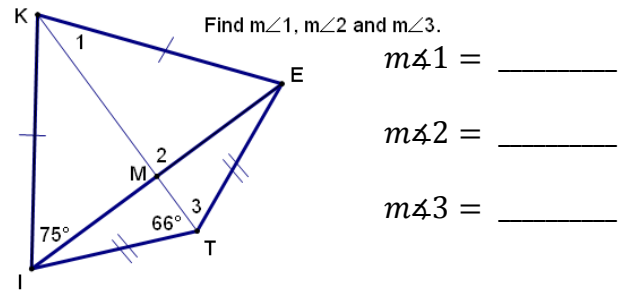
- 14) $UW = 2x + 6$
 $TV = 3x - 3$
 Find UW



15. Solve for x.



16.

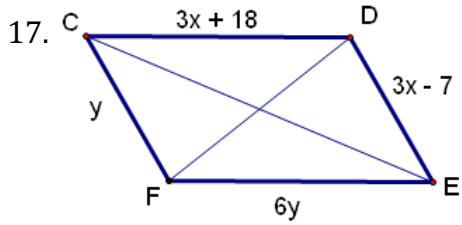


$m\angle 1 = \underline{\hspace{2cm}}$

$m\angle 2 = \underline{\hspace{2cm}}$

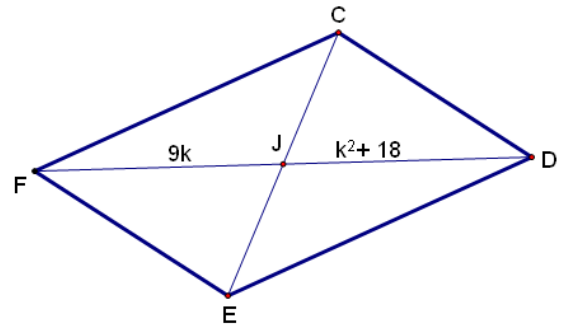
$m\angle 3 = \underline{\hspace{2cm}}$

Set up and solve for x and y using a system of linear equations. Assume CDEF is a parallelogram.

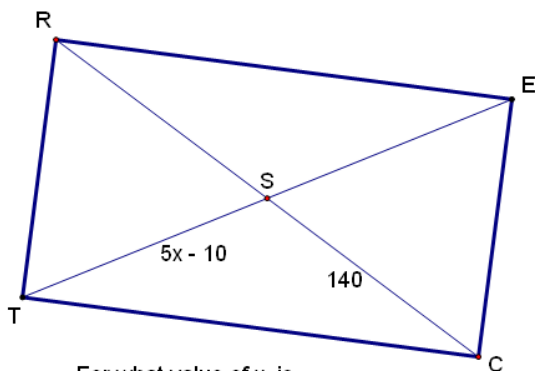


Set up and solve a quadratic equation to find the value of x in the following parallelogram.

18.



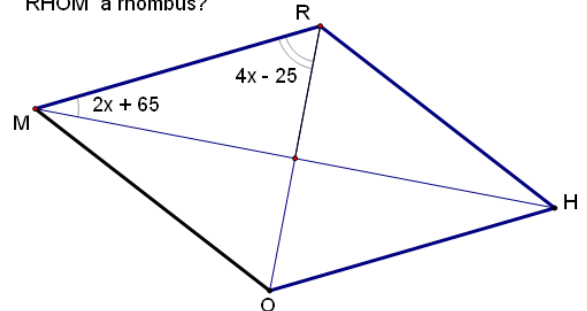
19.



For what value of x is parallelogram RECT a rectangle?

20.

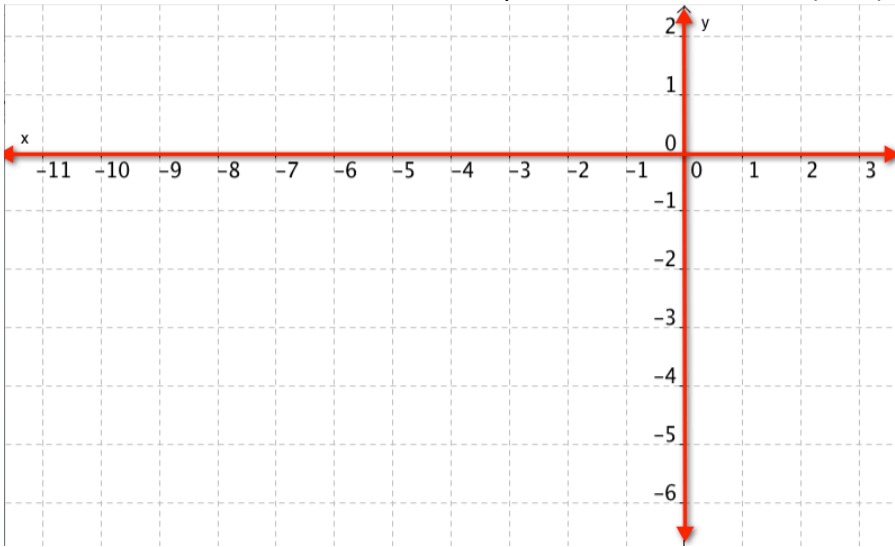
For what value of x is parallelogram RHOM a rhombus?



Application and Extension

Show all of your work clearly and completely!

1. The coordinates of the vertices of quadrilateral TRAP are T(-6, 2), R(-10, -3), A(-6, -6) and P(2, -4).



- Graph and label TRAP.
- Use the slope formula to show that TRAP is a trapezoid.

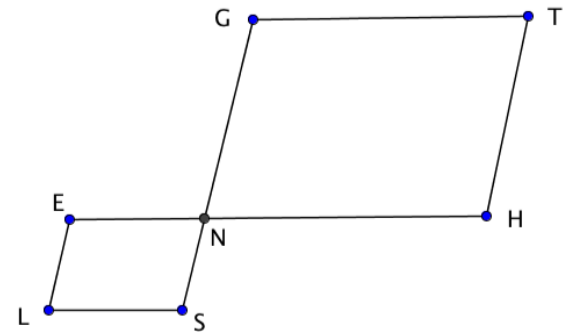
$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

- Examine your answer to part b and determine if TRAP is a right trapezoid. How do you know?

- Use the distance formula to determine whether TRAP is isosceles. $D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

2. Draw rhombus RHOM with diagonal RO. Find x if $m\angle HRO = (5x - 30)^\circ$ and $m\angle MRO = (3x + 6)^\circ$.

3. Statements Reasons



Given: \square LENS and NGTH

Prove: $\sphericalangle L \cong \sphericalangle T$

4. The car at each vertex of a Ferris Wheel holds a maximum of five people. The sum of the interior angles of the Ferris Wheel is 7740° . What is the maximum number of people the Ferris Wheel can hold

Solve each equation for x!

1. $-5x + 16 = -2(x - 1)$

2. $\frac{3}{x-1} = \frac{4}{x+1}$

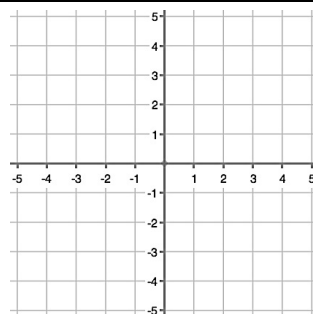
Multiply!

Factor!

3. $(x + 4)(x - 4)$

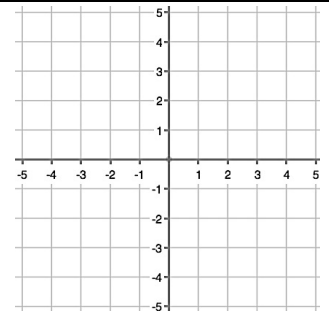
4. $x^2 + 2x - 15$

5. Graph the equation:
 $y - x = 0$



6. Graph the equation:

$4y = x$



Algebra Review

Unit 5 Theorems

The following theorems **will not** be given on the Unit 5 test. Please make sure you know each theorem well!

Polygon Theorems:

⇒ **Polygon Angle-Sum Theorem:** The sum of the measures of the angles = $(n - 2)(180^\circ)$.

Corollary: The measure of each angle of a regular n-gon is $\frac{(n-2)(180^\circ)}{n}$

⇒ **Polygon Exterior Angle-Sum Theorem:** The sum of the measures of the exterior angles of a polygon, one at each vertex, is 360° .

Parallelogram Theorems:

⇒ If a quadrilateral is a parallelogram, then its opposite sides are congruent.

⇒ If a quadrilateral is a parallelogram, then its consecutive angles are supplementary.

⇒ If a quadrilateral is a parallelogram, then its opposite angles are congruent.

⇒ If a quadrilateral is a parallelogram, then its diagonals bisect each other.

Theorems for Proving Parallelogram:

⇒ If both pairs of opposite sides of a quadrilateral are congruent, then the quadrilateral is a parallelogram.

⇒ If an angle of a quadrilateral is supplementary to both of its consecutive angles, then the quadrilateral is a parallelogram.

⇒ If both pairs of opposite angles of a quadrilateral are congruent, then the quadrilateral is a parallelogram.

⇒ If the diagonals of a quadrilateral bisect each other, then the quadrilateral is a parallelogram.

⇒ If one pair of opposite sides of a quadrilateral is both congruent and parallel, then the quadrilateral is a parallelogram.

Rhombus Theorems:

⇒ If a parallelogram is a rhombus, then its diagonals are perpendicular.

⇒ If a parallelogram is a rhombus, then each diagonal bisects a pair opposite angles.

Theorems for Proving Rhombuses:

⇒ If the diagonals of a parallelogram are perpendicular, then the parallelogram is a rhombus.

⇒ If one diagonal of a parallelogram bisects a pair of opposite angles, then the parallelogram is a rhombus.

Rectangle Theorems:

⇒ If the diagonals of a parallelogram are congruent, then the parallelogram is a rectangle.

⇒ If a parallelogram is a rectangle, then its diagonals are congruent.

Trapezoid Theorems:

⇒ If a quadrilateral is an isosceles trapezoid, then each pair of base angles is congruent.

⇒ If a quadrilateral is an isosceles trapezoid, then its diagonals are congruent.

⇒ **Trapezoid Midsegment Theorem:** If a quadrilateral is a trapezoid, then:

1.) the mid-segment is parallel to the bases, and

2.) the length of the mid-segment is half the sum of the lengths of the bases.

Kite Theorems:

⇒ If a quadrilateral is a kite, then its diagonals are perpendicular.