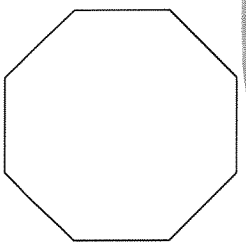
Geometry

Corrective Assignment Unit 5

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

1)



135°

2) regular 16-gon

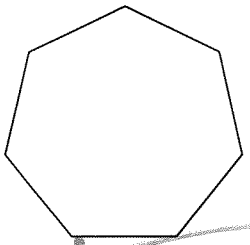
157.5°

USE $\frac{n-2(180)}{n}$

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

USE $\frac{360}{n}$

3)



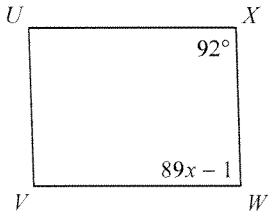
51.4

4) regular pentagon

72°

Solve for x. Each figure is a parallelogram.

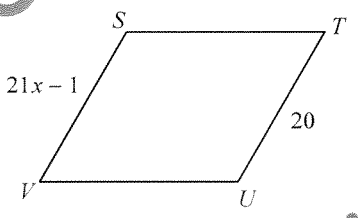
5)



$92 + 89x - 1 = 180$

$x = 1$

6)

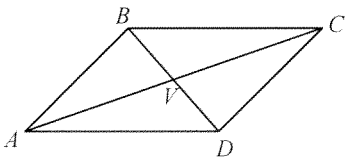


$21x - 1 = 20$

$x = 1$

Find the measurement indicated in each parallelogram.

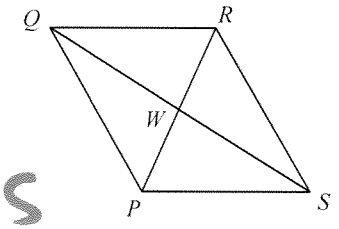
7) $BV = 11x$
$VD = 10x + 1$
Find BD



$11x = 10x + 1$

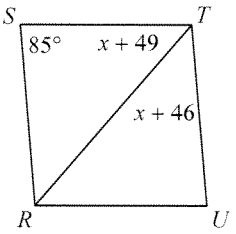
$x = 22$

8) $QW = x + 7$
$QS = 4x - 2$
Find QS



$2QW = QS$
$2(x+7) = 4x-2$
$x = 8$
$QS = 30$

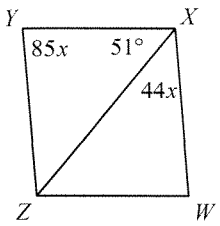
9) Find $m\angle STU$



$85 + x + 49 + x + 46 = 180$

$\angle STU = 95$

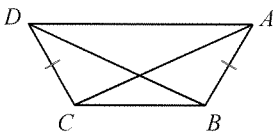
10) Find $m\angle ZXW$



$85x + 51 + 44x = 180$
$x = 1$
$\angle ZXW = 44°$

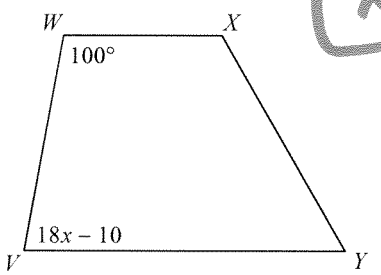
Solve for x. Each figure is a trapezoid.

11) $BD = 19$
$AC = 31 - x$



$19 = 31 - x$
$x = 12$

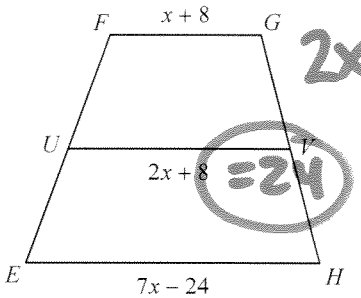
12)



$100 + 18x - 10 = 180$
$x = 5$

Find the length of the midsegment of each trapezoid.

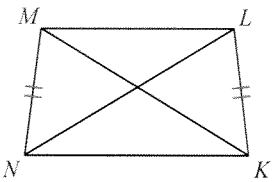
13)



$\frac{2x+8 + 7x-24}{2} = 2x+8$
$2x+8 = 24$
$2(2x+8) = 8x-16$
$x = 8$

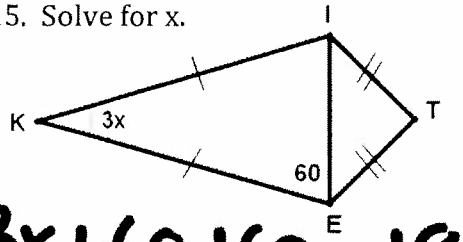
Find the length of the diagonal indicated for the trapezoid.

14) $MK = 3x - 20$
$NL = 4x - 30$
Find MK



$4x - 30 = 3x - 20$
$x = 10$
$MK = 10$

15. Solve for x.

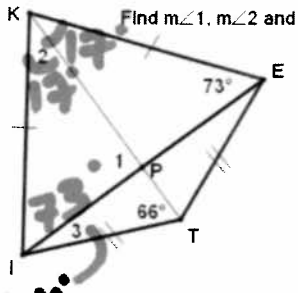


$3x+60+60=180$

$3x=60$

$x=20$

16. Find $m\angle 1$, $m\angle 2$ and $m\angle 3$.



$m\angle 1 = 90°$

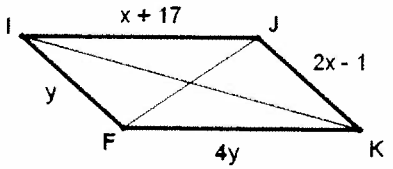
$m\angle 2 = 17°$

$m\angle 3 = 24°$

24°

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

17.



$y=2x-1$

$4y=x+17$

$(3,5)$ (x, y)

$4(2x-1)=x+17$

$8x-4=x+17$

$7x=21$

$x=3$

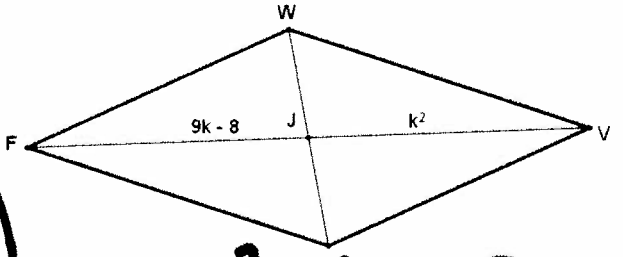
$y=2x-1$

$y=2(3)-1$

$y=5$

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

18.



$k^2=9k-8$

$k^2-9k+8=0$

-9

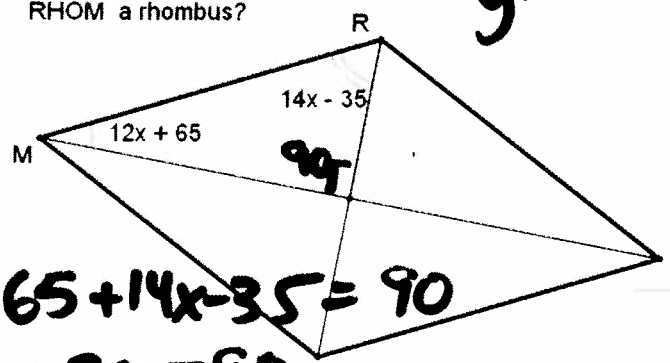
$-1 \quad -8$

8

$(k-1)(k-8)=0$

$k=1 \quad k=8$

19. For what value of x is parallelogram RHOM a rhombus?

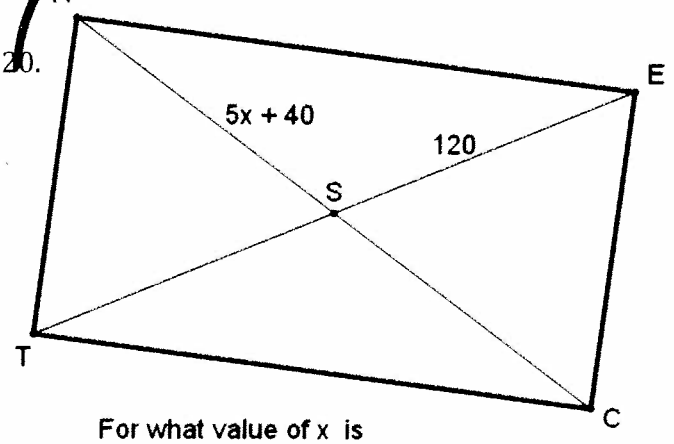


$12x+65+14x-35=90$

$26x+30=90$

$X=2.3$

20.



For what value of x is parallelogram RECT a rectangle?

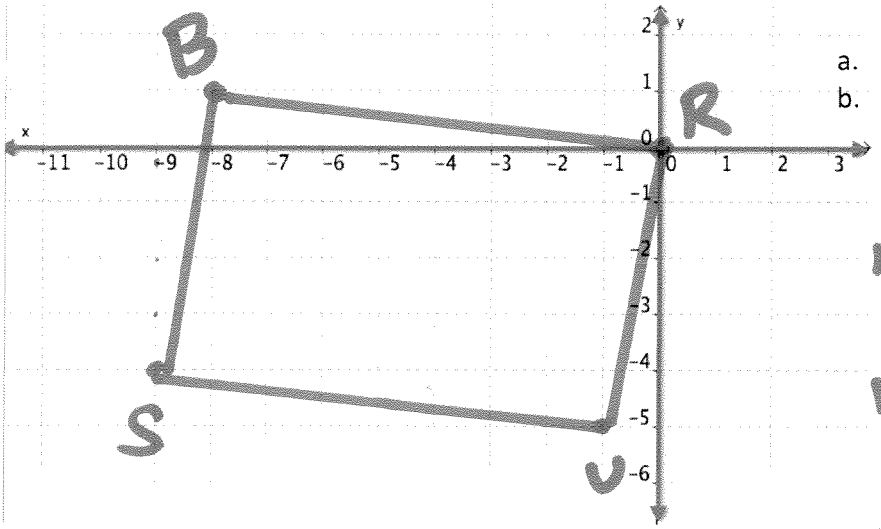
$5x+40=120$

$x=16$

Application and Extension

Show all of your work clearly and completely!

1. The coordinates of the vertices of quadrilateral BRUS are B(-8, 1), R(0, 0), U(-1, -5) and S(-9, -4)



a. Graph and label BRUS.

b. Use the slope formula to determine if BRUS is a parallelogram.

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

$m_{BR} = \frac{1-0}{-8-0} = -\frac{1}{8}$

$m_{SU} = \frac{-5-(-4)}{-1-(-9)} = -\frac{1}{8}$

$m_{SB} = \frac{1-(-4)}{-8-(-9)} = \frac{5}{1}$

$m_{RU} = \frac{0-(-5)}{0-(-1)} = \frac{5}{1}$

OPP SIDES ARE ||!

c. Examine your answer to part b and determine if BRUS is a rectangle. How do you know?

NO ... SLOPES ARE NOT NEG. RECIPROCAL THEREFORE NO RT. $\angle$'s!

d. Use the distance formula to determine whether BRUS's diagonals are congruent.

$D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$d_{BU} = \sqrt{(-1-(-8))^2 + (-5-1)^2}$

$= \sqrt{7^2 + (-6)^2}$

$= \sqrt{49 + 36} = \sqrt{85}$

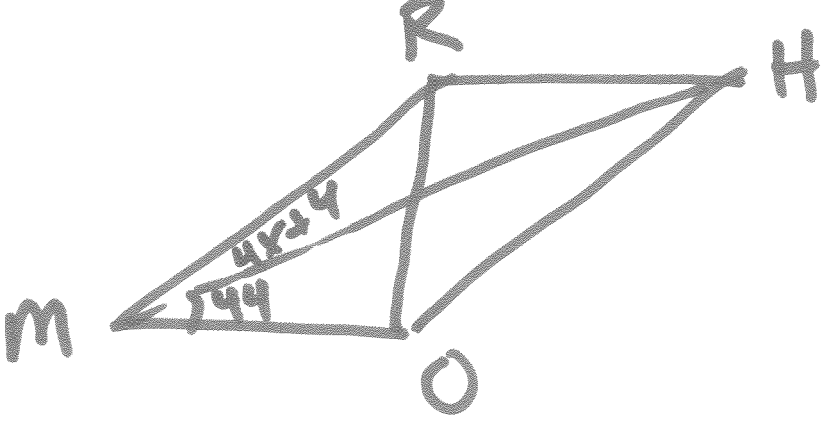
$d_{SR} = \sqrt{9^2 + 4^2}$

$= \sqrt{81 + 16}$

$\sqrt{97}$

NO!

2. Draw rhombus RHOM with diagonals $\overline{RO}$ and $\overline{MH}$. Find x if $m\angle HMO = 44°$ and $m\angle HMR = (4x + 4)°$.

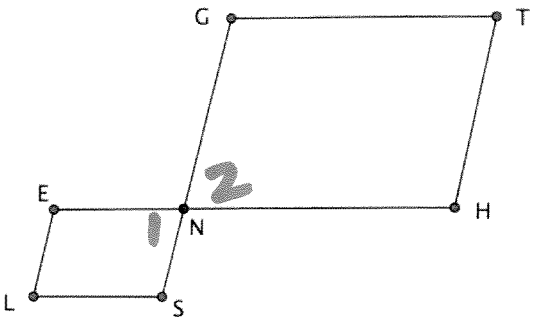


$4x + 4 = 44$

$x = 10$

3. ***Given***: ▱ LENS and NGTH

Prove : $\measuredangle S$ *is supplementary to* $\measuredangle T$



Statements	Reasons
1. LENS & NGTH ARE ▱'s	1. GIVEN
2. $\measuredangle L \cong \measuredangle 1$, $\measuredangle T \cong \measuredangle 2$	2. OPP ∠'s ▱ are $\cong$.
3. $\measuredangle 1 \cong \measuredangle 2$	3. Vertical ∠'s $\cong$
4. $\measuredangle 1 \cong \measuredangle T$	4. SUBT. PROP.
5. $\measuredangle 1$ is Supp $\measuredangle S$	5. Consec sides ▱ are supp.
6. $\measuredangle 1$ is Supp $\measuredangle T$	6. SUBT. PROP.

4. The car at each vertex of a Ferris Wheel holds a maximum of 5 people. The sum of the interior angles of the Ferris Wheel is 8280°. What is the maximum number of people the Ferris Wheel can hold?

$$\frac{(n-2)(180)}{180} = \frac{8280}{180}$$

$$n-2 = 46$$

$$n = 48 \times 5 \text{ ppl} = 240 \text{ ppl}$$