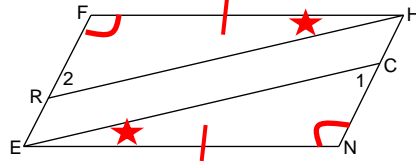


Geometry (G.GPE.B4,5 & G.CO.11)

Unit One B: Parallelogram Review for Quiz (HW38)

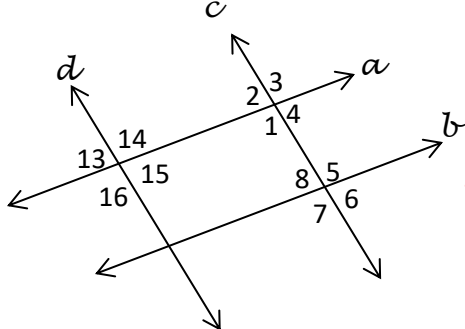
1. Given: Parallelogram FHNE;
 $\angle FHR \cong \angle NEC$

Prove: $\overline{RH} \cong \overline{EC}$



Statements	Reasons
1. \parallel gram FHNE	1. Given
2. $\overline{FH} \cong \overline{NE}$	2. \parallel gram \rightarrow opp sides \cong
3. $\angle F \cong \angle N$	3. \parallel gram \rightarrow opp \angle 's \cong
4. $\angle FHR \cong \angle NEC$	4. Given
5. $\triangle FRH \cong \triangle NCE$	5. ASA
6. $\overline{RH} \cong \overline{EC}$	6. CPCTC

2. Determine which of the lines, if any, are parallel. Provide a reason to support your answer.



- a) $\angle 13 \cong \angle 4$ c & d
Alt ext. \angle 's $\cong \rightarrow \parallel$ lines
- b) $\angle 8 \cong \angle 1$ None
s-s int \angle 's should be supp, not \cong
- c) $\angle 7 \cong \angle 16$ None
Not connected by a transversal

Name: _____

Date: _____ Period: _____

3. Given: VRZA is a parallelogram

Find the perimeter.

$$v + 12 = 3v + 5$$

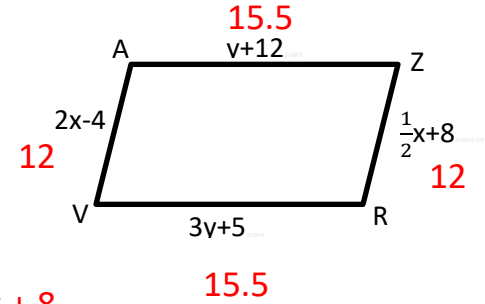
$$7 = 2v$$

$$v = 3.5$$

$$2x - 4 = \frac{1}{2}x + 8$$

$$\frac{3}{2}x = 12$$

$$x = \frac{24}{3} = 8$$



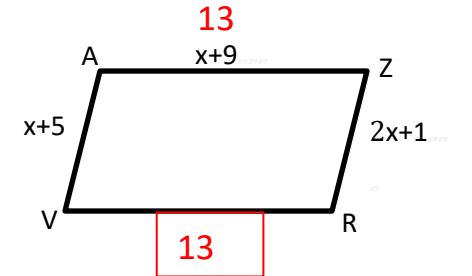
$$31 + 24 = 55$$

4. Given: VRZA is a parallelogram

Find VR.

$$x + 5 = 2x + 1$$

$$4 = x$$



5. Given: VRZA is a parallelogram: $\angle V = x^\circ$, $\angle A = (3x - 4)^\circ$

Find: $m\angle A$ and $m\angle Z$

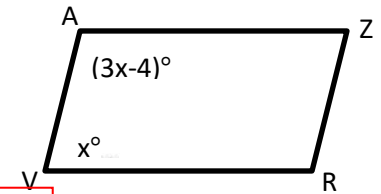
$$x + 3x - 4 = 180$$

$$4x = 184$$

$$x = 46$$

$$m\angle Z = 46^\circ$$

$$m\angle A = 134^\circ$$



6. Find the slope of the line through the points A (3,6) and B (4, -7).

$$m = \frac{-7-6}{4-3} = \frac{-13}{1} = -13$$

a) Find the slope of a line parallel to this line.

$$m = -13$$

b) Find the slope of a line perpendicular to this line.

$$m = \frac{1}{13}$$

7. Write the equation for a line parallel to $3x + 4y = 12$ and goes through the point (-8, 1).

$$m = \frac{-3}{4}$$

$$1 = \frac{-3}{4}(-8) + b$$

$$1 = 6 + b$$

$$-5 = b$$

$$y = \frac{-3}{4}x - 5$$

$$\frac{-3x}{4} = \frac{-3x}{4} + \frac{12}{4}$$

$$y = \frac{-3}{4}x + 3$$

8. Write the equation of a line perpendicular to $3x + 4y = 12$ and goes through (-3, -2).

$$m = \frac{-3}{4} \rightarrow m_{\text{perpendicular}} = \frac{4}{3}$$

$$-2 = \frac{4}{3}(-3) + b$$

$$-2 = -4 + b$$

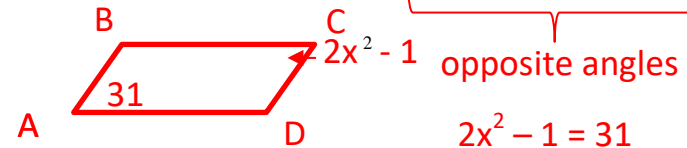
$$2 = b$$

$$y = \frac{4}{3}x + 2$$

9. Find the distance between the points A(3,6) and B(4, -7).

$$\begin{aligned} d &= \sqrt{(-7-6)^2 + (4-3)^2} \\ &= \sqrt{(-13)^2 + (1)^2} \quad \pm \\ &= \sqrt{169 + 1} \\ &= \sqrt{170} \end{aligned}$$

10. Given: Parallelogram ABCD. If $m\angle A = 31$, $m\angle C = 2x^2 - 1$, find x.



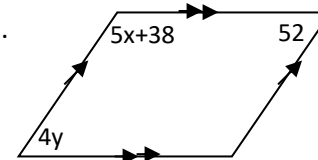
$$2x^2 - 1 = 31$$

$$2x^2 = 32$$

$$x^2 = 16$$

$$x = \pm 4$$

11. Find the value for x and y.



$$4y = 52$$

$$y = 13$$

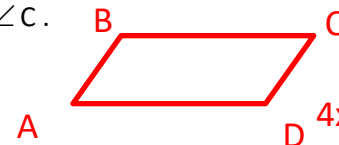
$$5x + 38 + 52 = 180$$

$$5x + 90 = 180$$

$$5x = 90$$

$$x = 18$$

12. Given: Parallelogram ABCD. If $m\angle A = 4x + 11$, $m\angle B = 6x - 1$, find $m\angle C$.



$$4x + 11 + 6x - 1 = 180$$

$$10x + 10 = 180$$

$$10x = 170$$

$$x = 17$$

$$m\angle C = m\angle A$$

$$m\angle C = 4(17) + 11$$

$$m\angle C = 79^\circ$$