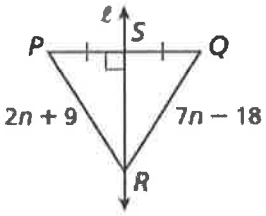
Name: Key Date: Block:

Advanced Geometry
Chapter 6 – 7 Review

1. Find PR.



$2n+9 = 7n-18$

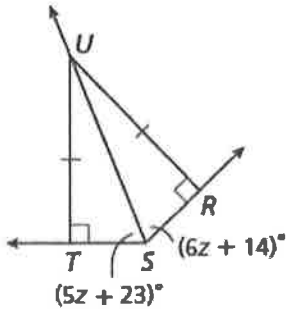
$27 = 5n$

$n = 5.4$

$2(5.4)+9$

PR = 19.8

2. Find $m\angle RST$.



$5z+23 = 6z+14$

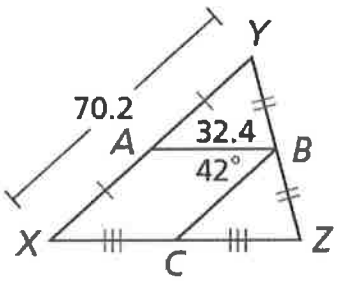
$9 = z$

$5(9)+23 = 68$

$68+68 = 136$

$m\angle RST = 136°$

3. Find each measure:



a. BC $\frac{70.2}{2} = 35.1$

b. XZ $32.4(2) = 64.8$

c. CX 32.4

d. $m\angle BCZ$ 42°

e. $m\angle BAX$ $180-42 = 138°$

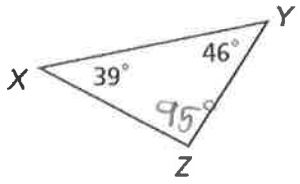
f. $m\angle YXZ$ $180-138 = 42°$

4. Determine if the measures could form a triangle.

a. 9, 12, 16 yes

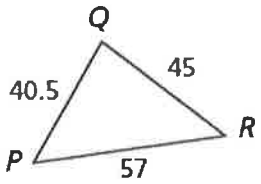
b. 11, 14, 27 no

5. List the side lengths in order from least to greatest.



$\overline{YZ}$, $\overline{XZ}$, $\overline{XY}$

6. List the angles in order by size from largest to smallest.



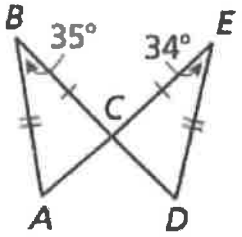
$\angle Q, \angle P, \angle R$

7. Two sides of a triangle are 8 and 12. What range of values would describe the possible lengths of the third side?

$8+12>X$ $\quad 20>X$ $\quad 8+X>12$ $\quad X>4$ $\quad 12+X>8$ $\quad X>-4$

$4<X<20$

8. Compare AC to DC.



$AC > DC$

9. Find the sum of the interior angle measures of a convex dodecagon.

12

$(12-2)180$

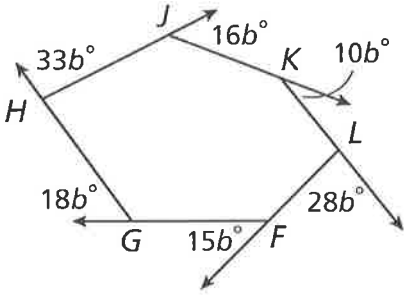
$1800°$

10. Find the measure of EACH interior angle of a regular pentagon.

5

$\frac{(5-2)180}{5} = \frac{540}{5} = 108°$

11. Find the measure of b in figure $FGHJL$. Then, find $m\angle LFG$.

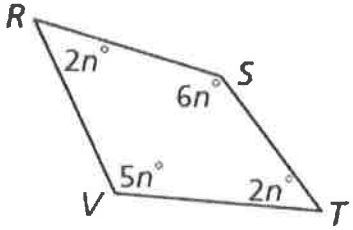


$33b+16b+10b+28b+15b+18b=360$

$120b=360$ $\quad b=3$ $\quad 15(3)=45$ $\quad 180-45$

$m\angle LFG = 135°$

12. Find $m\angle S$ in quadrilateral $RSTV$.

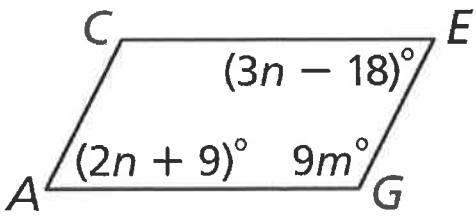


$2n+6n+2n+5n=360$

$15n=360$ $\quad n=24$ $\quad m\angle S = 144°$

$6(24)=144$

13. Given parallelogram ACEG, find $m\angle C$.



$3n-18 = 2n+9$

$n = 27$

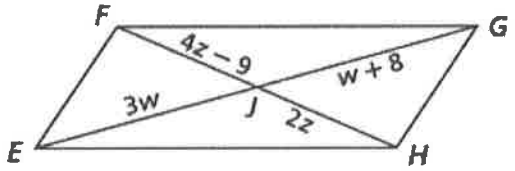
$m\angle A = 2(27)+9$

$= 63$

$m\angle C = 180-63$

$m\angle C = 117°$

14. Given parallelogram EFGH, find FH.



$4z-9 = 2z$

$-9 = -2z$

$z = 4.5$

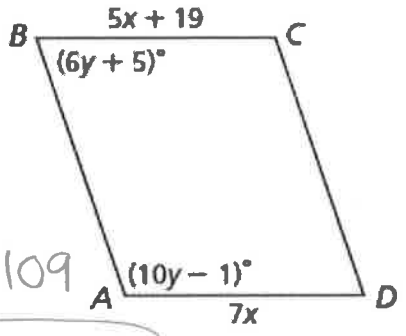
$2(4.5) = 9$

$9+9$

$FH = 18$

15. Given parallelogram ABCD, find:

a. AD



$7x = 5x+19$

$2x = 19$

$x = 9.5$

$7(9.5)$

$AD = 66.5$

b. $m\angle D$

$6y+5+10y-1 = 180$

$16y+4 = 180$

$16y = 176$

$y = 11$

$10y-1$

$10(11)-1$

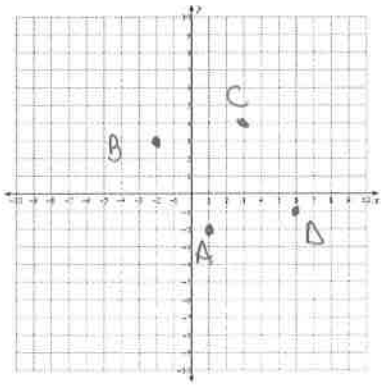
$110-1$

109

$180-109$

$m\angle D = 71°$

16. Three vertices of parallelogram ABCD are A(1, -2), B(-2, 3), and D(5, -1). Find the coordinates of C.



$C(3,4)$

m of $AB = \frac{5}{-3}$

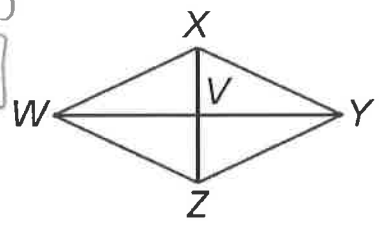
17. In rhombus $WXYZ$, $WX = 7a + 1$, $WZ = 9a - 6$, and $VZ = 3a$. Find each measure.

a. WZ $9(3.5)-6$ 25.5

b. XV $3(3.5)$ 10.5

c. XY 25.5

d. XZ 21



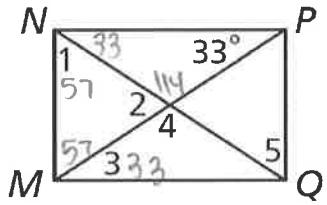
$7a+1=9a-6$

$7=2a$

$a=3.5$

18. Find the measure of each angle:

rectangle *MNPQ*



$m\angle 1 =$ 57

$m\angle 2 =$ 66

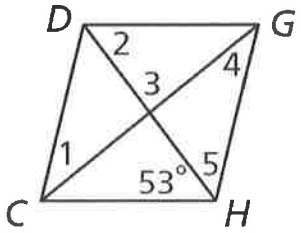
$m\angle 3 =$ 33

$m\angle 4 =$ 114

$m\angle 5 =$ 57

19. Find the measure of each angle:

rhombus *CDGH*



$m\angle 1 =$ 37

$m\angle 2 =$ 53

$m\angle 3 =$ 90

$m\angle 4 =$ 37

$m\angle 5 =$ 53

20. You are given the quadrilateral with vertices $A(-5,-1), B(-2,4), C(3,1), and\ D\ (0,-4)$. Use the following information to determine if the quadrilateral is a parallelogram, rectangle, rhombus, or square. List all names that apply. Justify your reasoning.

$$Midpoint\ of\ AC\ is\ (-1,0)\ and\ Midpoint\ of\ BD\ is\ (-1,0)$$
$$AC = 2\sqrt{17}, BD = 2\sqrt{17}$$
$$Slope\ of\ AC\ is\ \frac{1}{4}, Slope\ of\ BD\ is\ -4$$

parallelogram
rectangle
rhombus
square

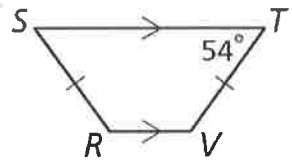
21. You are given the quadrilateral with vertices $A(-4,6), B(2,5), C(3,-1), and\ D\ (-3,0)$. Use the following information to determine if the quadrilateral is a parallelogram, rectangle, rhombus, or square. List all names that apply. Justify your reasoning.

$$Midpoint\ of\ AC\ is\ \left(\frac{-1}{2},\frac{5}{2}\right)\ and\ Midpoint\ of\ BD\ is\ \left(\frac{-1}{2},\frac{5}{2}\right)$$
$$AC = 7\sqrt{2}, BD = 5\sqrt{2}$$
$$Slope\ of\ AC\ is -1, Slope\ of\ BD\ is\ 1$$

parallelogram
rhombus

22. Find $m\angle R$ and $m\angle S$

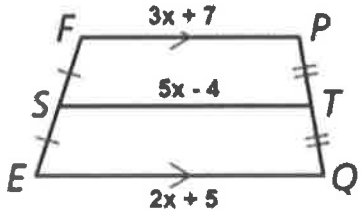
$m\angle S = 54°$
$m\angle R = 126°$



23. Find EQ.

$5x-4 = \frac{1}{2}(3x+7+2x+5)$
$5x-4 = \frac{1}{2}(5x+12)$
$5x-4 = 2.5x+6$
$2.5x = 10$
$x = 4$

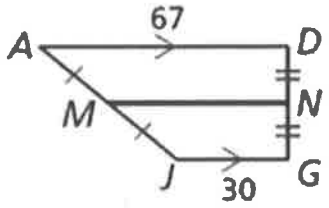
$EQ = 2(4)+5$
$EQ = 13$



24. Find MN.

$\frac{1}{2}(67+30) = MN$

$MN = 48.5$



25. Given $m\angle RST = 80°$ and $m\angle RUT = 60°$, find $m\angle SRV\ and\ m\angle STU$.

$m\angle SRV = 90-40 = 50°$
$m\angle STU = 180-(40+30)$
$m\angle STU = 110°$