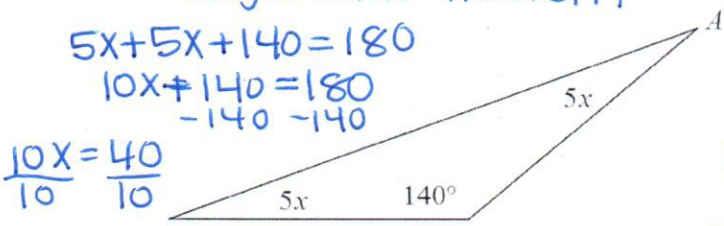
Secondary Math 2 **Unit 2 Review** **Name:** Key **Period:** _____

1-2 Find the measure of angle A

1. Angle Sum Theorem



$5x+5x+140=180$

$10x+140=180$

$-140\ \ -140$

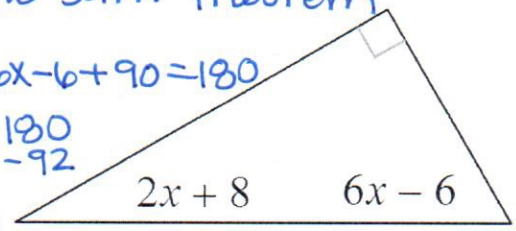
$\frac{10x}{10}=\frac{40}{10}$

$x=4$

$m\angle A=5(4)$

$m\angle A=20°$

2. Angle Sum Theorem



$2x+8+6x-6+90=180$

$8x+92=180$

$-92\ \ -92$

$\frac{8x}{8}=\frac{88}{8}$

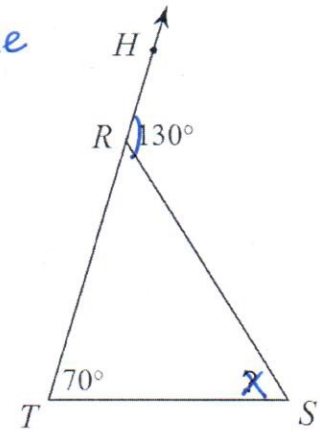
$x=11$

$m\angle A=2(11)+8$

$m\angle A=30°$

3. Find $m\angle S$

Exterior Angle Theorem



$130=70+x$

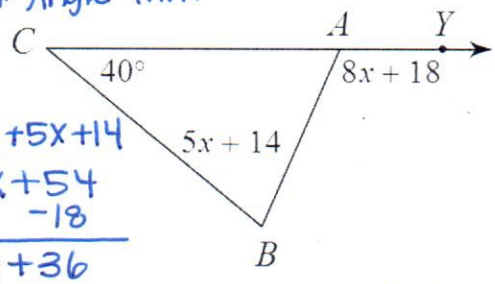
$-70\ \ -70$

$x=60°$

$m\angle S=60°$

4. Find $m\angle B$

Exterior Angle Thm



$8x+18=40+5x+14$

$8x+18=5x+54$

$-18\ \ -18$

$8x=5x+36$

$-5x\ \ -5x$

$\frac{3x}{3}=\frac{36}{3}$

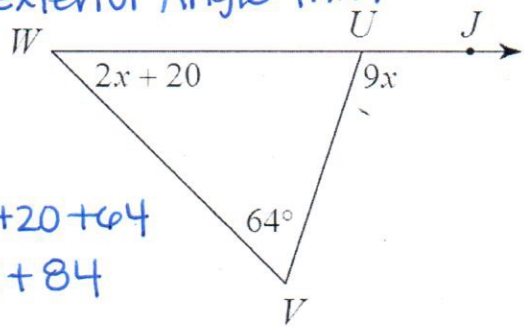
$x=12$

$m\angle B=5(12)+14$

$m\angle B=74°$

5. Find $m\angle W$.

Exterior Angle Thm



$9x=2x+20+64$

$9x=2x+84$

$-2x\ \ -2x$

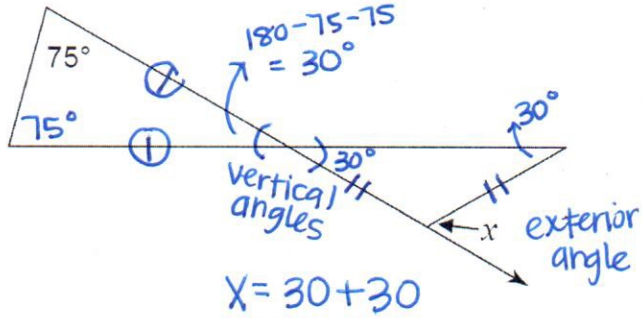
$\frac{7x}{7}=\frac{84}{7}$

$x=12$

$m\angle W=2(12)+20$

$m\angle W=44°$

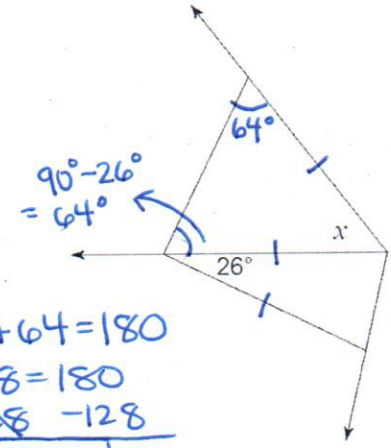
6. Find measure of $\angle x$. Isosceles △ Thm



$x=30+30$

$x=60°$

7. Find measure of $\angle x$.



$x+64+64=180$

$x+128=180$

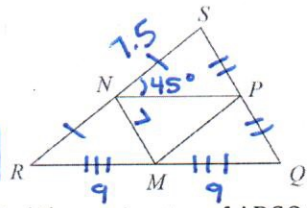
$-128 \quad -128$

$x = 52°$

Midsegment Thm

8. Given that points N, P, & M are mid points, and given $\overline{NM} = 7, \overline{RQ} = 18, \angle SNP = 45^o$

a. Find the length of NP



$2\overline{NP} = \overline{RQ}$

$\frac{2\overline{NP}}{2} = \frac{18}{2}$

$\overline{NP} = 9$

b. Given that $\overline{SN} = 7.5$, Find the perimeter of ΔRSQ

$\overline{SN} = \overline{RN} = 7.5$ so $\overline{RS} = 15$

$\overline{RM} = \overline{MQ} = 9$ so $\overline{RQ} = 18$

$\overline{NM} = 7$ $\overline{SQ} = 2(7) = 14$

perimeter $\Delta RSQ = 15+18+14 = 47$

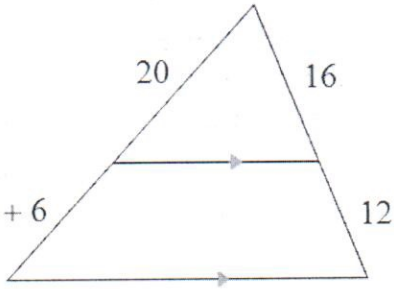
c. Find $\angle SRQ$

$\overline{NP} \parallel \overline{RQ}$ and $\overline{RS}$ is a transversal so by corresponding angles

$m\angle SRQ = 45°$

9. Solve for x.

Triangle proportionality Thm



$\frac{20}{x+6} = \frac{16}{12}$

$240 = 16(x+6)$

$240 = 16x + 96$

$-96 \quad -96$

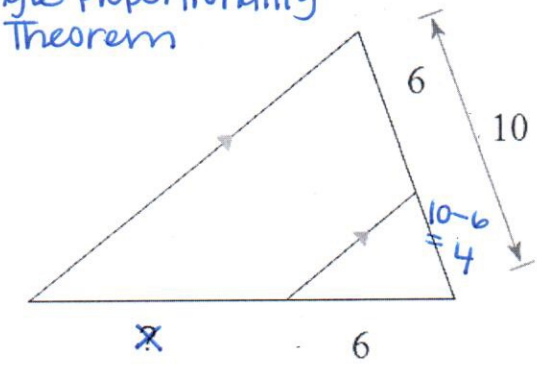
$144 = 16x$

$\frac{144}{16} = \frac{16x}{16}$

$x = 9$

10. Find the missing side length.

Triangle proportionality Theorem



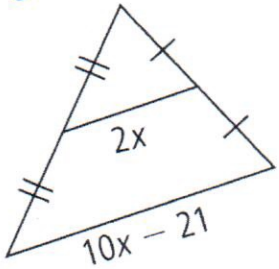
$\frac{4}{6} = \frac{6}{x}$

$\frac{4x}{4} = \frac{36}{4}$

$x = 9$

11. Solve for x.

Midsegment Theorem



$2(2x) = 10x - 21$

$4x = 10x - 21$

$-10x \quad -10x$

$-6x = -21$

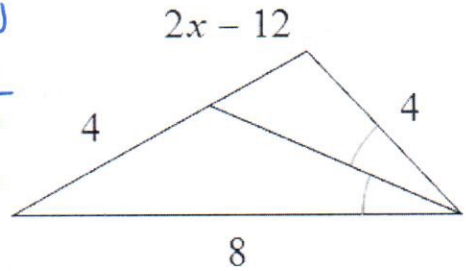
$\frac{-6x}{-6} = \frac{-21}{-6}$

$x = 3.5$

12. Solve for x.

Angle Bisector Theorem

$\frac{opp}{adj}$



$\frac{2x-12}{4} = \frac{4}{8}$

$8(2x-12) = 16$

$16x - 96 = 16$

$+96 \quad +96$

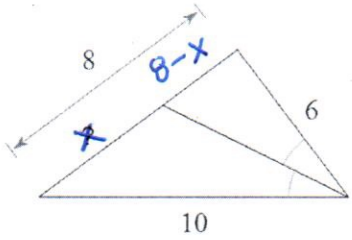
$16x = 112$

$\frac{16x}{16} = \frac{112}{16}$

$x = 7$

13. Find the missing side length.

Angle Bisector Thm



$\frac{8-x}{6} = \frac{x}{10}$

$6x = 10(8-x)$

$6x = 80 - 10x$

$+10x \quad +10x$

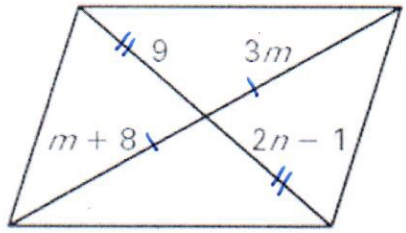
$16x = 80$

$\frac{16x}{16} = \frac{80}{16}$

$x = 5$

14. Given the parallelogram, solve for m and n.

diagonals Bisect each Other



$9 = 2n - 1$

$+1 \quad +1$

$\frac{10}{2} = \frac{2n}{2}$

$n = 5$

$3m = m + 8$

$-m \quad -m$

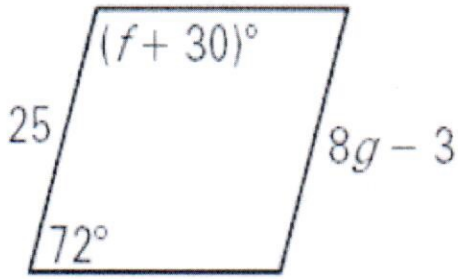
$\frac{2m}{2} = \frac{8}{2}$

$m = 4$

15. Given the parallelogram, solve for f and g.

opposite sides are ≅

same side interior angles



$25 = 8g - 3$

$+3 \quad +3$

$\frac{28}{8} = \frac{8g}{8}$

$g = 3.5$

$72 + f + 30 = 180$

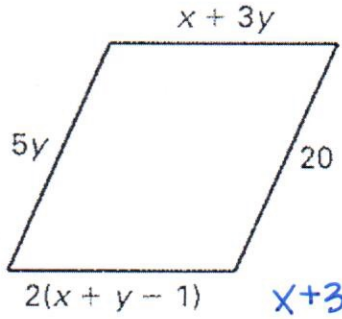
$102 + f = 180$

$-102 \quad -102$

$f = 78$

16. Given the parallelogram, solve for x and y.

opposite sides are ≅



$\frac{5y}{5} = \frac{20}{5}$

$y = 4$

$x + 3y = 2(x + y - 1)$

$x + 3y = 2x + 2y - 2$

$y = 4$

$x + 3(4) = 2x + 2(4) - 2$

$x + 12 = 2x + 6$

$-6 \quad -6$

$-x + 6 = 2x$

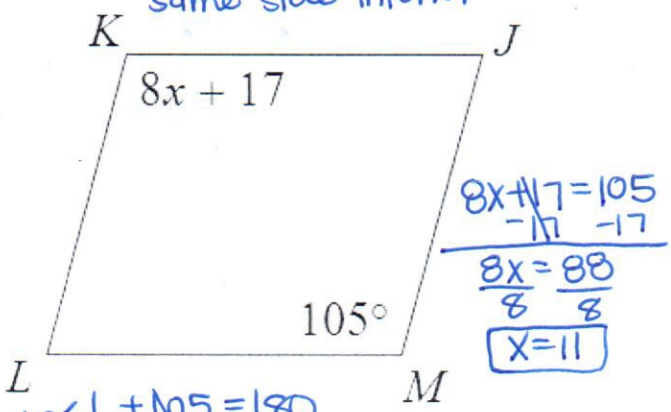
$-x \quad -x$

$x = 6$

17. Given the parallelogram, Solve for x and find $m\angle L$.

opposite angles are ≅

same side interior



$8x + 17 = 105$

$-17 \quad -17$

$\frac{8x}{8} = \frac{88}{8}$

$x = 11$

$m\angle L + 105 = 180$

$-105 \quad -105$

$m\angle L = 75$

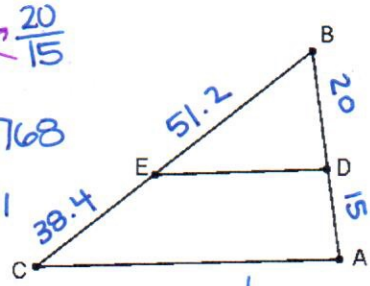
18. BE = 51.2, EC = 38.4, DA = 15, BD = 20. Is $\overline{AC} \parallel \overline{DE}$? Justify.

Triangle Proportionality Thm

$\frac{51.2}{38.4} \stackrel{?}{=} \frac{20}{15}$

$768 \stackrel{?}{=} 768$

yes equal



yes, $\overline{AC} \parallel \overline{DE}$!

19. Given the vertices
A(−4,4), B(−2,7), C(2,0) Classify the triangle as scalene, isosceles, or equilateral. Is the triangle a right triangle? Explain.

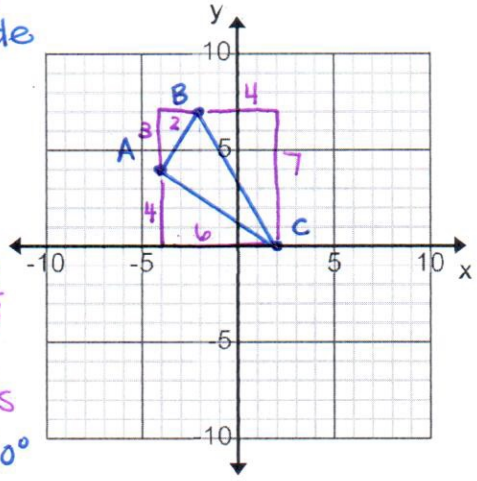
- NONE of the outside △'s are the same

$m_{AB} = \frac{3}{2}$

$m_{AC} = \frac{-4}{6} = \frac{-2}{3}$

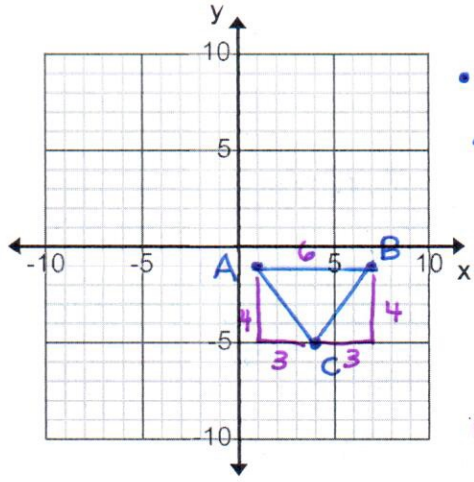
opposite reciprocals

- so $\angle A = 90°$



SCALENE RIGHT △

20. Given the vertices
A(1, −1), B(7, −1), C(4, −5) Classify the triangle as scalene, isosceles, or equilateral. Is the triangle a right triangle? Explain.



- Two outside △'s are ≅.

$m_{AC} = \frac{-4}{3}$

$m_{CB} = \frac{+4}{+3}$

Not same, Not opposite reciprocals

ISOSCELES △

21. What is the most precise classification of the quadrilateral formed by the given vertices:
T(−3,3), U(1,6), V(1,1), and W(−3,−2)
Show your work.

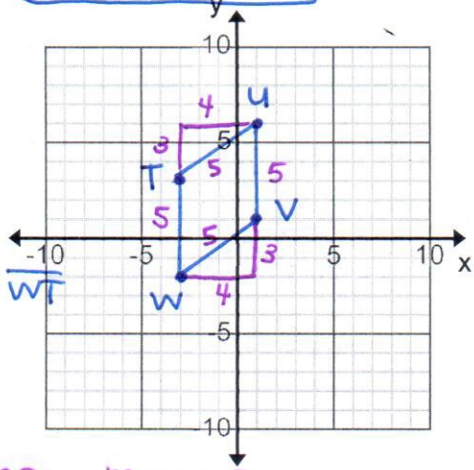
RHOMBUS

$3^2+4^2=c^2$

$9+16=c^2$

$25=c^2$

$c=5$



$\overline{TU} \cong \overline{UV} \cong \overline{VW} \cong \overline{WT}$

all sides are ≅

$m_{TU} = \frac{3}{4}$

$m_{WV} = \frac{3}{4}$

same

$\overline{TU} \parallel \overline{VW}$

$m_{TW} = \frac{5}{0}$

$m_{UV} = \frac{5}{0}$

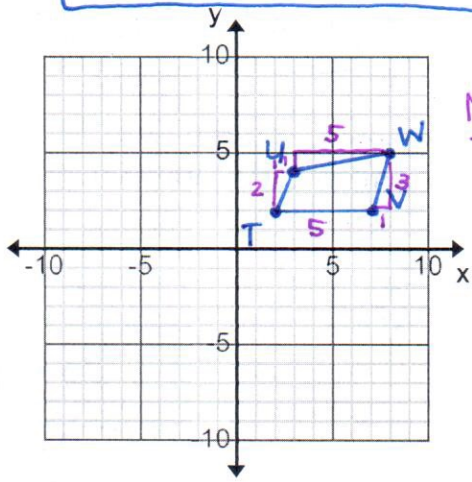
same

$\overline{TW} \parallel \overline{UV}$

opposite sides are parallel

22. Prove or disprove that the given vertices form a parallelogram.
T(2,2), U(3,4), V(7,2), and W(8,5).
Show your work.

NOT A PARALLELOGRAM



NONE of the sides are the same!