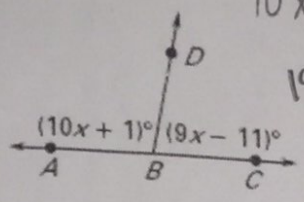
GSE Geometry Congruence & Triangles Review

Name: Key Date:

Unit 2 Part 1 Test Review

Missing Angles: Find x

1)



$10x+1+9x-11=180$

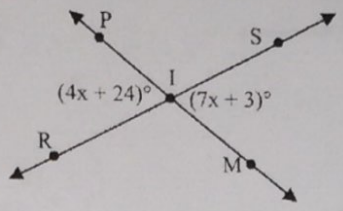
$19x-10=180$

$+10 \quad +10$

$\frac{19x}{19}=\frac{190}{19}$

$x=10$

2)



$4x+24=7x+3$

$-4x \quad -4x$

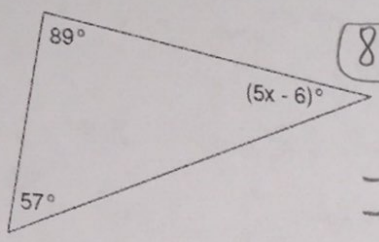
$24=3x+3$

$-3 \quad -3$

$\frac{21}{3}=\frac{3x}{3}$

$x=7$

3)



$89+57+5x-6=180$

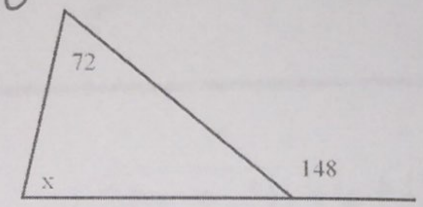
$140+5x=180$

$-140 \quad -140$

$\frac{5x}{5}=\frac{40}{5}$

$x=8$

4)



$x+72=148$

$-72 \quad -72$

$x=76$

5) $\angle 1$ and $\angle 2$ are complementary. Solve for x and the measure of both angles.

$\angle 1 = 12x+4$

$\angle 2 = 9x+2$

$12x+4+9x+2=90$

$21x+6=90$

$-6 \quad -6$

$\frac{21x}{21}=\frac{84}{21}$

$x=4$

$\angle 1 = 12(4)+4 = 48+4 = 52$

$\angle 2 = 9(4)+2 = 36+2 = 38$

6) The measure of one angle is 38 less than the measure of its supplement. Find the measure of each angle.

$\angle 1 = x-38 = 71$

$\angle 2 = x = 109$

$x+x-38=180$

$2x-38=180$

$+38 \quad +38$

$\frac{2x}{2}=\frac{218}{2}$

$x=109$

$=180$

7) One of two supplementary angles is 123° less than twice its supplement. Find the measure of both angles.

$\angle 1 = 2x-123 = 79$

$\angle 2 = x = 101$

$2x-123+x=180$

$3x-123=180$

$+123 \quad +123$

$\frac{3x}{3}=\frac{303}{3}$

$x=101$

Parallel Lines:

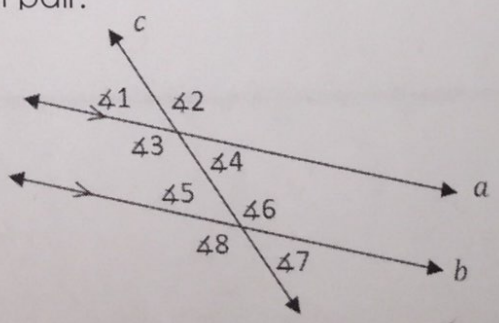
8) Name the angles listed and the special property of each pair.

a) $\angle 1$ and $\angle 5$ corresponding; $\cong$

b) $\angle 4$ and $\angle 6$ same side interior; 180°

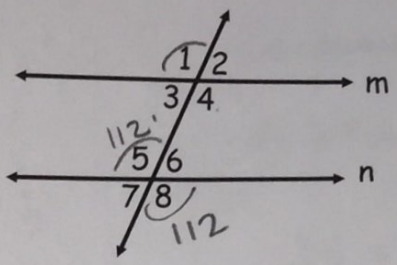
c) $\angle 2$ and $\angle 8$ Alt. Exterior; $\cong$

d) $\angle 4$ and $\angle 5$ Alt. Interior; $\cong$



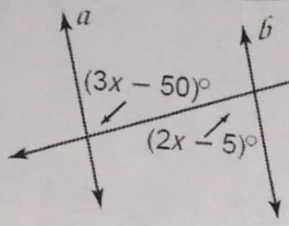
$m \parallel n$ and $m\angle 8$, find the measures of all the numbered angles in the figure.

$m\angle 8 = 112°, m\angle 1 = \underline{112}, m\angle 2 = \underline{68}, m\angle 3 = \underline{68}$,
$m\angle 4 = \underline{112}, m\angle 5 = \underline{112}, m\angle 6 = \underline{68}, m\angle 7 = \underline{68}$



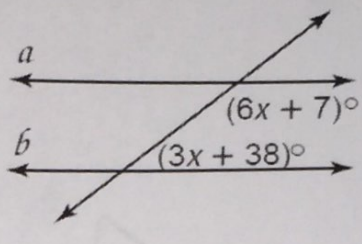
10) Solve for x.

a)



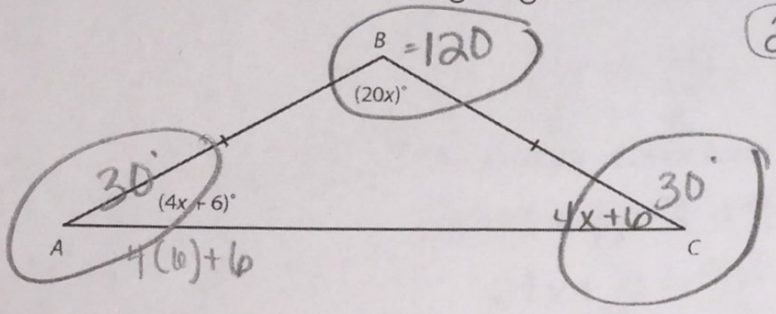
$3x - 50 = 2x - 5$
$-2x \quad -2x$
$x - 50 = -5$
$+50 \quad +50$
$x = 45$

b)



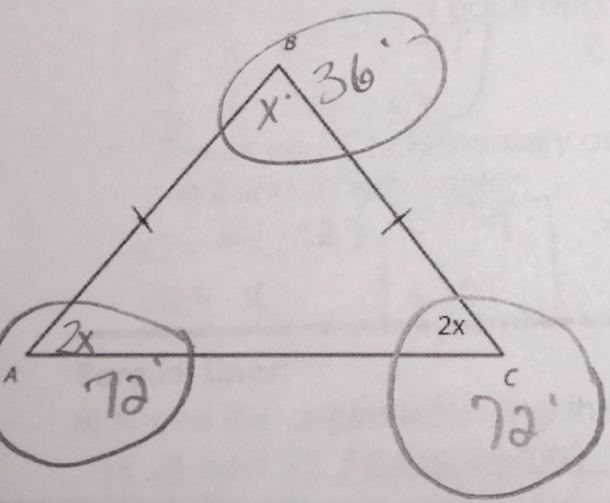
$6x + 7 + 3x + 38 = 180$
$9x + 45 = 180$
$-45 = -45$
$\frac{9x}{9} = \frac{135}{9}$
$x = 15$

11) Solve for x and the missing angles.



$20x + 4x + 6 + 4x + 6 = 180$
$28x + 12 = 180$
$-12 \quad -12$
$\frac{28x}{28} = \frac{168}{28}$
$x = 6$

12) Solve for x and the missing angles.



$2x + 2x + x = 180$
$\frac{5x}{5} = \frac{180}{5}$
$x = 36$