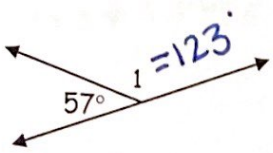
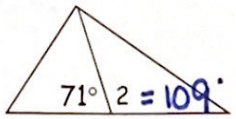
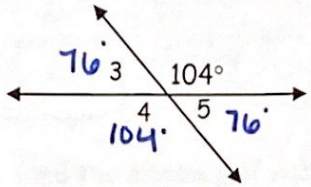
Key

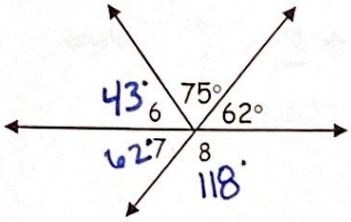
Angle Relationships: Mixed Review Warm-Up #1

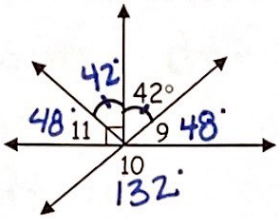
Find the measures of angles 1 through 22. Mark them in your diagram.

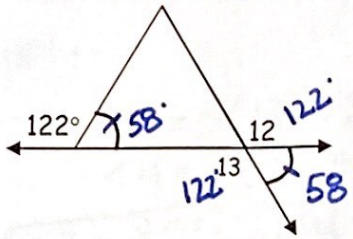


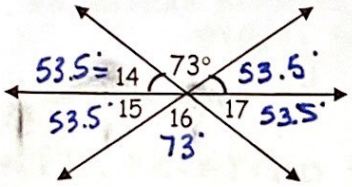


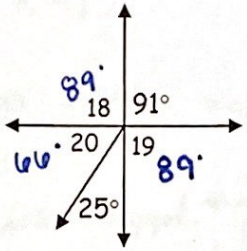


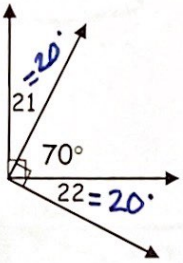






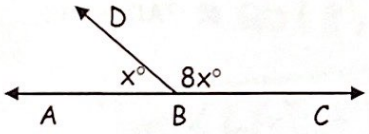






Directions: Comeplete the following, show the geometry and justifications for each.

23) Find m∠DBC.



$\angle ABD + \angle DBC = 180°$ linear pairs are Suppl.

$x + 8x = 180$

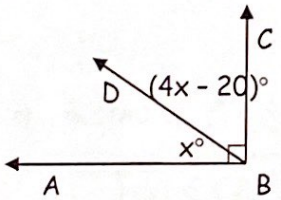
$9x = 180$

$x = 20$

$m\angle DBC = 8(20)$

$\boxed{m\angle DBC = 160°}$

24) If ∠ABC is a right angle, find m∠DBC.



$\angle ABC = 90°$ def of Right ∠

$\angle ABD + \angle DBC = \angle ABC$ angle addition

$x + 4x - 20 = 90$

$5x = 110$

$x = 22$

$m\angle DBC = 4(22) - 20$

$\boxed{m\angle DBC = 68°}$

25) ∠1 and ∠2 are complementary. m∠1 = 2x + 7 and m∠2 = 4x - 19. Find the measure of each angle.

26) ∠3 and ∠4 are supplementary. m∠3 = 5x + 22 and m∠4 = 7x + 2. Find the measure of each angle.

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25) $\angle 1$ and $\angle 2$ are complementary. $m\angle 1 = 2x + 7$ and $m\angle 2 = 4x - 19$. Find the measure of each angle.

$\angle 1 + \angle 2 = 90°$ def of compl.

$2x + 7 + 4x - 19 = 90°$

$6x - 12 = 90$

$6x = 102$

$x = 17$

$\angle 1 = 2(17) + 7$

$\angle 2 = 4(17) - 19$

$\boxed{\angle 1 = 41°}$ $\boxed{\angle 2 = 49°}$

26) $\angle 3$ and $\angle 4$ are supplementary. $m\angle 3 = 5x + 22$ and $m\angle 4 = 7x + 2$. Find the measure of each angle.

$\angle 3 + \angle 4 = 180$ def of suppl.

$5x + 22 + 7x + 2 = 180$

$12x + 24 = 180$

$12x = 156$

$x = 13$

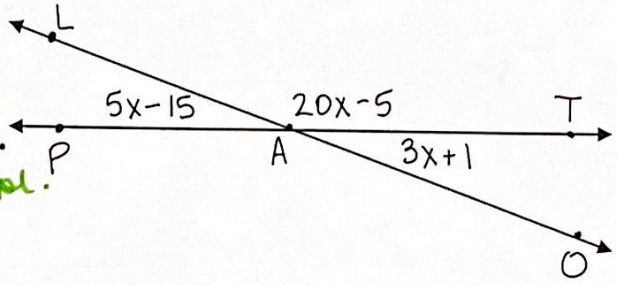
$\angle 3 = 5(13) + 22$

$\angle 4 = 7(13) + 2$

$\boxed{\angle 3 = 87°}$ $\boxed{\angle 4 = 93°}$

27) Find each of the following:

many ways to solve



a) x

$\angle PAL + \angle LAT = 180$ linear pairs are suppl.

$\angle LAT + \angle TAO = 180$ linear pairs are suppl.

$\angle LAP \cong \angle TAO$ vertical $\angle$s are $\cong$

$5x - 15 = 3x + 1$

$2x = 16$

$\boxed{x = 8}$

b) $m\angle LAT = 20(8) - 5$

$\boxed{m\angle LAT = 155°}$

c) $m\angle TAO = 3(8) + 1$

$\boxed{m\angle TAO = 25°}$

d) $m\angle PAO$ $\angle TAO + \angle PAO = 180$ linear pairs are suppl.

$25 + \angle PAO = 180$

$\boxed{m\angle PAO = 155°}$