

\*NOTE: not drawn to scale | Transversal Challenge Answer Pg \_\_\_\_\_

1)  $2(3)^2 + 2(9) = 18$   
 $a = 2x^2$   
 $b = x + 15$   
 $3 + 15$

$2x^2 = x + 15$   
 $2x^2 - x - 15 = 0$

Find  $m\angle a$  &  $m\angle b$

$m\angle a$   $\frac{18}{12.5}$   
 $m\angle b$   $\frac{18}{12.5}$   
 or

$\begin{array}{r} -30 \\ -6 \times 5 \\ -1 \end{array}$   
 $(2x-6)(2x+5)$   
 $x-3=0$   $2x+5=0$   
 $x=3$   $2x=-5$   
 $x=-5/2$

2)  $l \parallel m$

$x^2 - 180x + 7,124 = 180$   
 $x^2 - 180x + 6,944 = 0$

$a = x^2 - 180x$   
 $b = 7,124$

Find  $m\angle a$  &  $m\angle b$

$m\angle a$   $\frac{56}{1}$   
 $m\angle b$   $\frac{124}{1}$

3)

$a = b$   
 $b = d$   
 $a + c = 180$   
 $l \parallel m$

$8(\frac{3}{2})^2 - 3 = 15$   
 $a = 8x^2 - 3$   
 $b = 10x$

$8x^2 - 3 = 10x$   
 $8x^2 - 10x - 3 = 0$   
 $(8x-12)(8x+2) = 0$   
 $(2x-3)(4x+1) = 0$

$\begin{array}{r} -24 \\ -12 \times 2 \\ -10 \end{array}$

$2x-3=0$   
 $2x=3$   $x=3/2$  ✓

$4x+1=0$   
 $x=-1/4$  ~~can't have negative degrees~~

Find  $m\angle c$   $\frac{165}{1}$

4)

$6x + x^2 = 24 = x$   
 $x^2 + 5x - 24 = 0$   
 $x-3=0$   $x+8=0$   
 $x=3$   $x=-8$   
 can't have negative

$6x + x^2 - 24$   
 $(x-3)(x+8) = 0$   
 $18 + 9 - 24$

Angle a is unknown.  
 Angle b is six times angle a, plus the square of angle a less the product of 6 & 4.

$m\angle a$   $\frac{3}{1}$   
 $m\angle b$   $\frac{3}{1}$