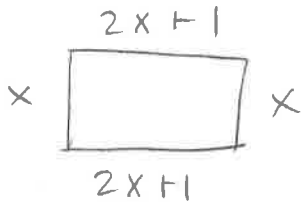
Station 7: Word Problems

1. If the length of a rectangle is 1 cm longer than twice the width, write an expression to represent the ~~perimeter~~ area of the rectangle. ~~If the area is 36 square centimeters, what is the width of the rectangle~~?



$Area = l \cdot w$

$A = x(2x+1)$

$A = 2x^2 + x$

2. A square table has side lengths of $4x - 6$. Write a polynomial that represents the area of the table top. Then find the area of the table top when $x = 6$.

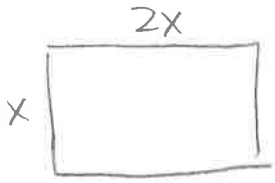
$A = l \cdot w$

$A = (4x-6)(4x-6)$

$A = 4x^2 - 48x + 36$

$A = 4(6)^2 - 48(6) + 36 = 324$

3. The length of a regulation handball court is twice its width. Write a polynomial that represents the area of the court. The width of a team handball court is 20 meters. Find the area of the court.



$A = l \cdot w$

$A = x \cdot 2x$

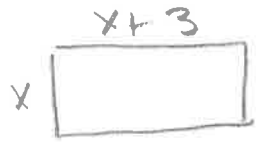
$A = 2x^2$

$A = 2(20)^2$

$A = 2(400)$

$A = 800 \text{ sq m}$

4. The length of a rectangle is 3 feet longer than its width. Write a polynomial that represents the area of the rectangle. Find the area of the rectangle when the width is 5 feet.



$A = l \cdot w$

$A = x(x+3)$

$A = x^2 + 3x$

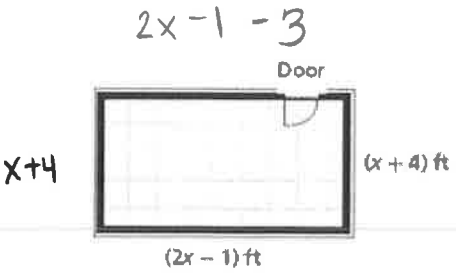
$A = (5)^2 + 3(5)$

$A = 25 + 15$

$A = 40 \text{ ft}^2$

Station 6: Word Problems

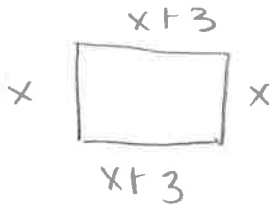
1. Tammy plans to put a wallpaper border around the perimeter of her room. She will not put the border across the doorway, which is 3 feet wide. Write a polynomial that represents the number of feet of wallpaper that Tammy will need.



$2x-1-3+x+4+2x-1+x+4$

$6x+3$

2. If the length of a rectangle is 3 cm longer than its width, write an expression to represent the perimeter of the rectangle. If the perimeter is 22 centimeters, what is the width of the rectangle?



Perimeter = $4x+6$

$4x+6=22$

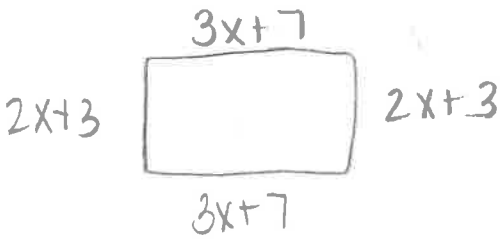
$-6 \quad -6$

$\frac{4x}{4} = \frac{16}{4}$

$x=4$

4cm

3. The length of a rectangle is represented by $2x + 3$, and its width is represented by $3x + 7$. The perimeter of the rectangle is 35 units. Find the value of x.



Perimeter = $10x+20$

$10x+20=35$

$-20 \quad -20$

$\frac{10x}{10} = \frac{15}{10}$

$x=1.5$

1.5units