

POP QUIZ!!

Each problem below is incorrect. Find the error and rework the problem off to the right.

1.  $\frac{x-3}{5} + 4 = -10$

$x-3+4 = -50$

$x+1 = -50$

$x = -51$

Option 1

Wrong SAMEP

$\frac{x-3}{5} + 4 = -10$   
-4 -4

$5 \cdot \left( \frac{x-3}{5} = -14 \right) \cdot 5$

$x-3 = -70$   
+3 +3

$x = -67$

Option 2

Wrong Multiplication

$5 \cdot \left( \frac{x-3}{5} + 4 = -10 \right) = 5$

$x-3+20 = 50$

$x+17 = 50$

-17 -17

$x = -67$

2.  $2|x-5| + 12 = 30$

$2|x-5| = 18$

$x-5 = 9$

$x = 14$

2 solutions for abs Val.

$2|x-5| + 12 = 30$   
-12 -12

$\frac{2|x-5|}{2} = \frac{18}{2}$

$|x-5| = 9$

$x-5 = 9$   
 $x = 14$

$x-5 = -9$   
 $x = -4$

Can't distribute into

3.  $4(x+3)^2 + 8 = 100$

$(4x+12)^2 + 8 = 100$

$(4x+12)^2 = 108$

$4x+12 = \sqrt{108}$

$4x+12 = 10.39$

$4x = -1.61$

$x = -0.402$

$4(x+3)^2 - 8 = 100$   
+8 +8

$\frac{4(x+3)^2}{4} = \frac{108}{4}$

$\sqrt{(x+3)^2} = \sqrt{27}$

$x+3 = 5.2$

$x+3 = -5.2$

$x = 2.2$

$x = -8.2$

Can't add 3+4. The 4 is multiplying, not adding.

$$4. \quad 3 + 4\sqrt{x+1} = 5$$

$$4\sqrt{x+1} = 2$$

$$\sqrt{x+1} = \frac{2}{4}$$

$$x+1 = \left(\frac{2}{4}\right)^2$$

$$x+1 = \frac{1}{4}$$

$$x = -0.75$$

$$3 + 4\sqrt{x+1} = 5$$

$$-3 \quad -3$$

$$4\sqrt{x+1} = 2$$

$$\sqrt{x+1} = \left(\frac{1}{2}\right)^2$$

$$x+1 = \frac{1}{4}$$

$$-1 \quad -1$$

$$x = -0.75$$

5.  $|x-4|=3$  Wrong split.

$$x-4=3$$

$$x=7$$

~~$$x+4=3$$~~
~~$$x=-1$$~~

$$|x-4|=3$$

$$x-4=3$$

$$x=7$$

$$x-4=-3$$

$$x=1$$

6.  $\frac{x+1}{3} - \frac{x}{5} = 3$

Missed the 1

$$\frac{5x+1}{15} - \frac{3x}{15} = \frac{45}{15}$$

$$5x+1-3x=45$$

$$2x+1=45$$

$$2x=44$$

$$x=22$$

$$\frac{x+1}{3} - \frac{x}{5} = 3$$

$$5 \cdot \frac{(x+1)}{3} - \frac{3 \cdot x}{3 \cdot 5} = \frac{15 \cdot 3}{15 \cdot 1}$$

$$15 \cdot \left( \frac{5x+5}{15} - \frac{3x}{15} = \frac{45}{15} \right) \cdot 15$$

$$5x+5-3x=45$$

$$2x+5=45$$

$$2x=40$$

$$x=20$$

Find common denominator. 3 & 5 go into 15.

Clear the denominators by multiplying by 15.