



NAME: _____

DATE: _____

SOLVING EQUATIONS Practice Quiz

SHOW ALL YOUR WORK FOR FULL MARKS

1. Solve for the unknown in each of the following equations. Round final answers to two decimal places or keep as a fraction.

a) $9(h - 2) + 7 = -6(2h + 5)$

$9h - 18 + 7 = -12h - 30$

$9h - 11 = -12h - 30$

$\frac{21h}{21} = \frac{-19}{21}$

$h = \frac{-19}{21}$

b) $\frac{-8a - 9}{3} = \frac{-7a + 10}{8}$

$a = \frac{-102}{43}$

c) $3 - 5x = 3x + 19$

$x = -2$

d) $\frac{w}{9} = -2$

$w = -18$

2. Rearrange the following formulas [K2]

a) $P = 2a + b$ (for a)

$\frac{P - b}{2} = \frac{2a}{2}$

$\frac{P - b}{2} = a$

b) $E = mc^2$ (for c)

$E = mc^2$

$\frac{E}{m} = c^2$

$\sqrt{\frac{E}{m}} = c$



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3. The following solution contains an error. Identify from what step where the error has been made and describe the error. Solve the question with the correct solution.

$$\frac{2}{7}(p-1) = 2$$

$$7 \left[\frac{2}{7}(p-1) \right] = (2) 7$$

Step 1: $7 \left[\frac{2}{7}(p-1) \right] = 2$

$$2(p-1) = 14$$

Step 2: $2(p-1) = 2$

$$2p - 2 = 14$$

Step 3: $2p - 2 = 2$

$$2p = 16$$

Step 4: $2p = 2 + 2$

$$p = 8$$

Step 5: $2p = 4$

Step #1 → only multiplied 1 side by 7.

Step 6: $\frac{2p}{2} = \frac{4}{2}$

Step 7: $p = 2$

c) Prove that your solution is correct by doing a LS = RS check for both your solution AND the incorrect solution.

Incorrect RS = LS Check

My RS = LS Check

$$\frac{2}{7}(p-1) = 2$$

$$\frac{2}{7}(p-1) = 2$$

$$\frac{2}{7}(2-1) \quad | \quad 2$$

$$\frac{2}{7}(8-1) \quad | \quad 2$$

$$\frac{2}{7}(1) \quad | \quad 2$$

$$\frac{2}{7}(7) \quad | \quad 2$$

$$\frac{2}{7} \neq 2$$

$$2 \quad | \quad 2$$

LS \neq RS

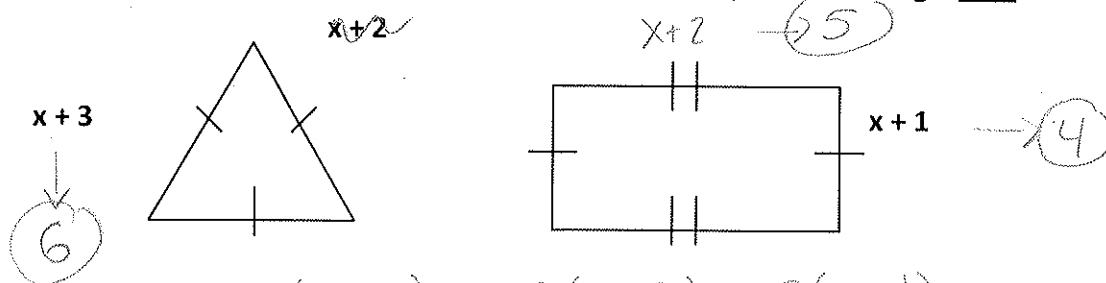
LS = RS ✓



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4. An equilateral triangle and a rectangle have the same perimeter.
 a) Find the side lengths (in metres) of BOTH the equilateral triangle AND the rectangle.



$$3(x+3) = 2(x+2) + 2(x+1)$$

$$3x+9 = 2x+4 + 2x+2$$

$$3x+9 = 4x+6$$

$$\boxed{3 = x}$$

5. Lisa is 8 years older than Megan and Alyssa is 2 years younger than Megan. The sum of their ages is 42. How old is each girl? (**Remember:** Define your variables and include a final statement)

$$L = m + 8 \quad A = m - 2$$

$$L = 20$$

$$L + A + m = 42$$

$$A = 10$$

$$m+8 + m-2 + m = 42$$

$$m = 12$$

$$3m + 6 = 42$$

$$3m = 36$$

$$m = 12$$

6. The sum of three consecutive odd integers is 57. Use an algebraic equation to find the integers.

$$x + x + 2 + x + 4 = 57$$

$$3x + 6 = 57$$

$$3x = 51$$

$$\frac{3x}{3} = \frac{51}{3}$$

$$\boxed{x = 17}$$