

Grade 7/8 Math Solving Algebra Pre Test 2023

Name: Key Class: _____

Solve for x in the following and then use LS – RS Check.

a) $-7x = -28$ $\frac{-7x}{-7} = \frac{-28}{-7}$ $x = 4$	Left side $-7x$ $\rightarrow -7(4)$ $= -28$	Right Side -28
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LS = RS ✓

b) $22x - 12 = 54$ $\frac{22x - 12}{22} = \frac{66}{22}$ $x = 3$	Left side $22x - 12$ $\Rightarrow 22(3) - 12$ $= 66 - 12$ $= 54$	Right Side 54
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LS = RS ✓

c) $4x + 9 = 21 + 2x$ $\frac{4x + 9 - 2x}{2} = \frac{21 - 2x + 2x}{2}$ $\frac{2x + 9}{2} = \frac{21}{2}$ $x = 6$	Left side $4x + 9$ $\rightarrow 4(6) + 9$ $= 24 + 9$ $= 33$	Right Side $21 + 2x$ $\rightarrow 21 + 2(6)$ $= 21 + 12$ $= 33$
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LS = RS ✓

d) $-12x - 17 = 5x + 68$ $\frac{-12x - 17 - 5x}{-17} = \frac{5x + 68 - 5x}{-17}$ $\frac{-17x - 17}{-17} = \frac{85}{-17}$ $x = -5$	Left side $-12x - 17$ $\rightarrow -12(-5) - 17$ $= 60 - 17$ $= 43$	Right Side $5x + 68$ $\Rightarrow 5(-5) + 68$ $= -25 + 68$ $= 43$
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LS = RS ✓

e) $-6(x + 7) = 4(12 + x)$ $\frac{-6(x + 7) - 4x}{-10} = \frac{4(12 + x) - 4x}{-10}$ $\frac{-6x - 42 - 4x}{-10} = \frac{48 + 4x - 4x}{-10}$ $\frac{-10x - 42}{-10} = \frac{48}{-10}$ $x = -9$	Left side $\rightarrow -6(-9 + 7)$ $= -6(-2)$ $= 12$	Right Side $4(12 + x)$ $= 4(12 + x)$ $\rightarrow 4(12 + -9)$ $= 4(3)$ $= 12$
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LS = RS ✓

f) $3(x/4) = 9$

$$\frac{4 \times x}{4} = 3 \times 4$$

$$x = 12$$

Left side

$$3(x/4)$$

$$= 3(12/4)$$

$$= 3 \times 3$$

$$= 9$$

Right Side

$$9$$

LS = RS ✓

g) $2/3(9x) = -40$

Express this answer as a decimal and a fraction

$$\frac{2}{3}(9x) = -40$$

$$\frac{18}{3}x = -40$$

$$6x = \frac{-40}{6}$$

$$x = -6\frac{4}{6}$$

$$= -6\frac{2}{3}$$

$$x = -6\frac{2}{3}$$

$$\text{or } x = -6.67$$

i) $4(\frac{2x}{5} - 9) = 16 - x$

$$5 \times \frac{8x}{5} - 36 = (16 - x)$$

$$8x - 180 = 16 - x$$

$$8x = 260 - x$$

$$13x = 260$$

$$x = 20$$

Left Side

$$\rightarrow 4(\frac{2(20)}{5} - 9)$$

$$= 4(\frac{40}{5} - 9)$$

$$= 4(8 - 9)$$

$$= 4(-1)$$

$$= -4$$

Right Side

$$16 - x$$

$$= 16 - (20)$$

$$= -4$$

LS = RS

j) Grade 8 Only

$$\frac{3x^2 + 2}{11} = 3^2 - 1$$

$$\frac{3x^2 + 2}{11} = 9 - 1$$

$$11 \times \frac{3x^2 + 2}{11} = 10 \times 11$$

$$3x^2 + 2 = 110$$

$$3x^2 = 108$$

$$x^2 = \sqrt{36}$$

$$x = 6$$

Left Side

$$\rightarrow \frac{3(6)^2 + 2}{11}$$

$$\frac{3(36) + 2}{11}$$

$$= \frac{108 + 2}{11}$$

$$= \frac{110}{11}$$

$$= 10$$

Right Side

$$3^2 - 1$$

$$= 9 - 1$$

$$= 10$$

LS = RS