

Algebra Quiz Q1 Version 1 2016

1) Solve for x: $(2x-1) = 5 + 2(1-3x)$

$$2x-1 = 5+2-6x$$

$$2x-1 = 7-6x$$

$$8x = 8$$

$$x = 1$$

3) Solve for x: $0.3(2x-1) + 2.5 = 0.7x$

$$3(2x-1) + 25 = 7x$$

$$6x-3 + 25 = 7x$$

$$22 = x$$

5) Factor $x^2 + 8x - 20$

$$(x+10)(x-2)$$

Name Answers

2) Solve for x: $\frac{3x}{4} + \frac{x+2}{8} = 1 + \frac{x}{2}$

$$\frac{6x}{8} + \frac{x+2}{8} = 1 + \frac{4x}{8}$$

$$6x + x + 2 = 8 + 4x$$

$$3x = 6$$

$$x = 2$$

4) Solve for x: $5x^2 - 3 = 2x$

$$5x^2 - 2x - 3 = 0$$

$$(5x+3)(x-1) = 0$$

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

6) Factor $3x^4 + 18x^3 + 27x^2$

$$3x^2(x^2 + 6x + 9)$$

$$3x^2(x+3)^2$$

7) Solve for x: $2x^3 - 2x^2 = 24x$

$$2x^3 - 2x^2 - 24x = 0$$

$$2x(x^2 - x - 12) = 0$$

$$2x(x-4)(x+3) = 0$$

$$x = 0, 4, -3$$

8) Solve for x: $\frac{2}{x} + \frac{3}{5} = \frac{4}{5x}$

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

$$x = -2$$

$$10 + 3x = 4$$

$$3x = -6$$

9) Solve for x: $\frac{x-1}{x-5} - \frac{1}{x} = \frac{20}{x^2-5x}$

$$\frac{x(x-1)}{x(x-5)} - \frac{1(x-5)}{x(x-5)} = \frac{20}{x(x-5)}$$

$$x^2 - x - x + 5 = 20$$

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

$$(x-5)(x+3) = 0$$

$$x \neq 5 \quad x = -3$$

10) Solve for x: $ax + b = 2x + 3b$

$$ax - 2x = 2b$$

$$x(a-2) = 2b$$

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