

Math 9 Algebra and Equations Extra Practice Solutions

1. $5x = 7$

$$x = \frac{7}{5}$$

2. $11 = -3a$

$$a = -\frac{11}{3}$$

3. $\frac{x}{3} = 9$

$$x = 27$$

4. $4 = -\frac{b}{6}$

$$b = -24$$

5. $\frac{4}{7} = \frac{\square}{8}$

$$7x = 32$$

$$x = \frac{32}{7}$$

6. $\frac{4}{\square} = \frac{3}{5}$

$$3x = 20$$

$$x = \frac{20}{3}$$

7. $4x(8 - 5) = 3$

$$12x = 3$$

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

8. $-4(1 - 5x) = 3$

$$-4 + 20x = 3$$

$$20x = 7$$

$$x = \frac{7}{20}$$

9. $\frac{x}{6} = \frac{3}{7}$

$$7x = 18$$

$$x = \frac{18}{7}$$

10. $\frac{4}{9} = \frac{2}{x}$

$$4x = 18$$

$$x = \frac{9}{2}$$

11. $\frac{5}{x} = 7$

$$x = \frac{5}{7}$$

$$12. -3 = \frac{2}{t}$$
$$t = -\frac{2}{3}$$

$$13. 1 - 2x = 3(x - 2)$$
$$1 - 2x = 3x - 6$$
$$7 = 5x$$
$$x = \frac{7}{5}$$

$$14. -2(5x - 3) = 3 - x$$
$$-10x + 6 = 3 - x$$
$$3 = 9x$$
$$x = \frac{1}{3}$$

$$15. \frac{5}{x-3} = \frac{4}{7}$$
$$35 = 4x - 12$$
$$x = \frac{47}{4}$$

$$16. \frac{5x-3}{7} = \frac{-2}{5}$$
$$-14 = 25x - 15$$
$$x = \frac{1}{25}$$

$$17. 4 - \frac{3}{2} = \frac{2}{4+3x}$$
$$\frac{5}{2} = \frac{2}{4+3x}$$
$$4 = 20 + 15x$$
$$x = -\frac{16}{15}$$

$$18. 4x + \frac{x}{5} - 1 = 7$$
$$20x + x - 5 = 35$$
$$21x = 40$$
$$x = \frac{40}{21}$$

$$19. \frac{p}{3} + p - 2 = \frac{4}{7}$$

Multiply by 21

$$7p + 21p - 42 = 12$$
$$28p = 54$$
$$p = \frac{27}{14}$$

$$20. 4 - 2x = 1 - \frac{3}{4}(x - 3)$$

Multiply by 4

$$16 - 8x = 4 - 3(x - 3)$$
$$16 - 8x = 4 - 3x + 9$$
$$3 = 5x$$

$$x = \frac{3}{5}$$

21. $4x - 4 = \frac{4}{3} \left(\frac{3}{2}x - 1 \right)$

Multiply by 3

$$12x - 12 = 4 \left(\frac{3}{2}x - 1 \right)$$

$$12x - 12 = 6x - 4$$

$$6x = 8$$

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

22. See diagram below:



The front portion of the truck is $\frac{2}{9}$ of its total length. If the remainder of the truck is 5 m, what is the total length of the truck?

$$\frac{7}{9}x = 5$$

$$7x = 45$$

$$x = \frac{45}{7}$$