

# Solutions to WS 16.2 - Solving Proportions, #1-10 all

When solving a proportion, cross multiply then solve the equation.

$$\textcircled{1} \quad \frac{8}{a} = \frac{16}{3}$$

$$16a = 24$$

$$a = \frac{24}{16}$$

$$\textcircled{a = \frac{3}{2}}$$

$$\textcircled{2} \quad \frac{5}{24} = \frac{x}{12}$$

$$24x = 60$$

$$x = \frac{60}{24}$$

$$\textcircled{x = \frac{5}{2}}$$

$$\textcircled{3} \quad \frac{18p}{54} = \frac{12}{9}$$

$$162p = 648$$

$$\textcircled{p = 4}$$

$$\textcircled{4} \quad \frac{12c}{28} = \frac{15}{7}$$

$$84c = 420$$

$$\textcircled{c = 5}$$

$$\textcircled{5} \quad \frac{5}{3n+5} = \frac{5}{5n-2}$$

$$5(3n+5) = 5(5n-2)$$

$$15n + 25 = 25n - 10$$

$$25 = 10n - 10$$

$$35 = 10n$$

$$\frac{35}{10} = n$$

$$\textcircled{n = \frac{7}{2}}$$

$$\textcircled{6} \quad \frac{5}{3+b} = \frac{3}{7b+1}$$

$$5(7b+1) = 3(3+b)$$

$$35b + 5 = 9 + 3b$$

$$32b + 5 = 9$$

$$32b = 4$$

$$b = \frac{4}{32}$$

$$\textcircled{b = \frac{1}{8}}$$

$$\textcircled{7} \quad \frac{4}{x+3} = \frac{2}{2x+1}$$

$$4(2x+1) = 2(x+3)$$

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

$$6x + 4 = 6$$

$$6x = 2$$

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

$$\textcircled{x = \frac{1}{3}}$$

$$\textcircled{8} \quad \frac{4}{y+4} = \frac{2}{3y+2}$$

$$4(3y+2) = 2(y+4)$$

$$12y + 8 = 2y + 8$$

$$10y + 8 = 8$$

$$10y = 0$$

$$y = \frac{0}{10}$$

$$\textcircled{y = 0}$$

$$\textcircled{9} \quad \frac{s-2}{5} = \frac{2s+3}{3}$$

$$3(s-2) = 5(2s+3)$$

$$3s - 6 = 10s + 15$$

$$-6 = 7s + 15$$

$$-21 = 7s$$

$$-3 = s$$

$$\textcircled{s = -3}$$

$$\textcircled{10} \quad \frac{t+3}{2} = \frac{2t-5}{6}$$

$$6(t+3) = 2(2t-5)$$

$$6t + 18 = 4t - 10$$

$$2t + 18 = -10$$

$$2t = -28$$

$$\textcircled{t = -14}$$