

Week 2 Practice Problems - Solutions

Equations

1. $x = 6$
2. $x = 8$
3. $2x = 8$
 $x = 4$
4. $3c = 15$
 $c = 5$
5. $1 = 3x$
 $x = \frac{1}{3}$
6. $2 = 4p$
 $p = \frac{1}{2}$
7. $2f = 30$
 $f = 15$
8. $2 = 12x$
 $x = \frac{1}{6}$
9. $x = 7$
10. $3w = 6$
 $w = 2$
11. $2t + 6 = 3t - 3$
 $9 = t$
12. $6 = 3x - \frac{x}{2}$
 $6 = \frac{6x}{2} - \frac{x}{2}$
 $6 = \frac{6x - x}{2}$
 $6 = \frac{5x}{2}$
 $12 = 5x$
 $x = \frac{12}{5} (= 2\frac{2}{5})$
13. $c = 4$
14. $16 = e$
15. $9 = 3(g+2)$
 $9 = 3g + 6$
 $3 = 3g$
 $g = 1$

16. $2x + 3 = 5$ or $2x + 3 = -5$
 $2x = 2$ $2x = -8$
 $x = 1$ $x = -4$
17. $-x - 7 = 10$ or $-x - 7 = -10$
 $-x = 17$ $-x = -3$
 $x = -17$ $x = 3$

Exponents

1. x^8
2. p
3. 1
4. $\sqrt{e}$
5. $\sqrt{9} = 3$
6. xy^2
7. g^8
8. e^{4f^6}
9. a^5b^2c
10. $a^{-1}b^2$ (or $\frac{b^2}{a}$)
11. $\frac{y^2}{x^2y^2} \times x^{-2}y^3$
 $= \frac{x^{-4}y^3}{1} (= y^3/x^4)$
12. $\frac{8 \times 3 \times 4}{2} = 48$
13. $f^2g \times f^{-3}g^{-3}$
 $= \frac{f^2}{f^3} \cdot \frac{g}{g^3} (= \frac{1}{f \cdot g^2})$
14. $x^0y^0 = 1$
15. $\frac{e^{-2}g^{-3} \times e^3g^{-2}}{e^4g} = \frac{eg^{-5}}{e^4g}$
 $= \frac{1}{e^3g^6}$
 $(= \frac{1}{e^3g^6})$

$$1. \quad 6 - 3 + 4 = 7$$

$$2. \quad \sqrt{18} = \sqrt{9 \times 2} = 3\sqrt{2}$$

$$3. \quad \sqrt{7} \times \sqrt{7 \times 2} = 7\sqrt{2}$$

$$4. \quad 4 - \sqrt{16} = 4 - 4 = 0$$

$$5. \quad \sqrt{20} + \sqrt{45} = 2\sqrt{5} + 3\sqrt{5} = 5\sqrt{5}$$

$$\left(\begin{array}{l} \sqrt{20} = \sqrt{4 \times 5} = 2\sqrt{5} \\ \sqrt{45} = \sqrt{9 \times 5} = 3\sqrt{5} \end{array} \right)$$

$$6. \quad 9 + 8 = 17$$

$$7. \quad 2^6 + 3^2 = 64 + 9 = 73$$

$$8. \quad \frac{4}{9} \times \frac{1}{4} = \frac{1}{9}$$

$$9. \quad -27 + 16 = -11$$

$$10. \quad 9 - 8 + 1 = 2$$