

## Math 150 Week in Review 1 Answer Key

1. (a) Natural Numbers:  $1, \sqrt{81}$   
 (b) Integers:  $-7, 1, \sqrt{81}$   
 (c) Rational Numbers:  $-7, 0.46, 0.78\overline{94}, \sqrt{81}, 1, \frac{12}{7}$   
 (d) Irrational Numbers:  $\pi^2, \sqrt[4]{8}$
2. (a)  $(-12, 4]$   
 (b)  $(\frac{4}{15}, 1]$
3. 9
4.  $\frac{47}{126}$
5. (a)  $\frac{9y^{38}}{16x^{18}}$   
 (b)  $\frac{27x^{3/10}y^{91/20}}{4}$
6.  $x^{29/12}$
7. (a)  $3a^6|b|^5\sqrt{2}$   
 (b)  $(2x^7 + 3x^5)\sqrt[3]{3x}$
8. (a)  $x^5y^3 - 3x^7y - x^3y^3 + 3x^5y + x^2y^5 - 3x^4y^3$   
 (b)  $8x^3 + 49x^2 + 114x - 14$
9. (a)  $(3x - 5)(3x + 5)(x - 4)$   
 (b)  $(8x + 1)^2$   
 (c)  $2x^{-2/5}(x - 4)(x^2 + 4x + 16)$
10. (a)  $(-\infty, \infty)$   
 (b)  $(-\infty, -5) \cup (-5, 5) \cup (5, \infty)$   
 (c)  $[4, 5) \cup (5, \infty)$   
 (d)  $(-\infty, -\frac{7}{2}) \cup (-\frac{7}{2}, \infty)$   
 (e)  $(-6, \infty)$
11. (a)  $\frac{(3x + 2)(5x - 1)}{(x + 3)^2}$   
 (b)  $\frac{7x - 4}{(x - 4)^2(x + 4)}$
12. (a)  $\frac{x(2y + x)}{y(2x + y)}$   
 (b)  $\frac{2 + (x - 2)^{17/12}}{(x - 2)^2}$
13. (a)  $\frac{7\sqrt[7]{x^4}}{x}$   
 (b)  $\frac{\sqrt{x(x+h)} + x}{h}$