Math 1021 Review for Test 2 – Answer Key

1) $x = 9$ **2)** $No\ solution$ **3)** $x = 4, x = 5$ **4)** $x = -1$ **5)** $x = -2$

6) a. $f(1) = \sqrt{2}$, $f(2) = \sqrt{-1}$ Does not exist as a real number

   b. $g(4) = \frac{1}{2}$, $g(1) = 1$

7) a. $\left(-\infty, \frac{5}{3}\right]$ b. $(0, \infty)$

8) a. $5|t|$ b. $|x + 1|$ c. $-\frac{1}{3}$ d. -5

   e. Does not exist as a real number   f. $-5\sqrt[3]{5}$

9) a. $2xz\,y^2\sqrt{3xy}$ b. $\frac{2a^2}{3b}\sqrt[3]{a}$ c. $\frac{3}{2}x^2$

10) a. $\frac{\sqrt{5x}}{x}$ b. $\sqrt{x}$ c. $\frac{\sqrt{x}+1}{x-1}$ d. -1

11) a. $(x + 1)^{\frac{15}{2}}$ b. $(x - 1)^{\frac{3}{2}}(x - 2)^{\frac{3}{2}}$ c. $(x)^{\frac{1}{6}}$

12) a. $9x^2$ b. $\frac{2x^2}{y}$ c. $\frac{y}{x^{1/2}}$ or rationalized $\frac{y\sqrt{x}}{x}$

d. $\frac{a^{\frac{4}{5}}}{3^{\frac{5}{2}}\,b^{\frac{7}{3}}}$ e. $\sqrt[3]{4x}$

13) a. $11a^2$ b. $(1 - 2b)\sqrt{6b}$ c. $9 - x$

d. $4a - 12\sqrt{ab} + 9b$ e. $8\sqrt[3]{y^2} - 4y$ f. $2y\sqrt[3]{9x^2}$

g. $(10y + 7)\sqrt[3]{2y}$ h. $\sqrt[4]{x - 1}$