1. What is the vertical asymptote of the following function?

$$f(x) = \frac{x+2}{x-5}$$

2. What is the greatest common denominator of the fractions below?

$$\frac{1}{x^2} \; ; \; \frac{1}{5x}$$

3. Simplify the following expression.

$$x^2 - 9 \cdot \frac{1}{x^2 + x - 6}$$

4. Solve the following equation?

$$\frac{1}{x} + \frac{2}{3} = 2$$

5. What is the domain for the following function?

$$f(x) = 4 + \sqrt{x - 5}$$

6. What is the point of symmetry of the following cubic function?

$$f(x) = 5 - \sqrt[3]{x - 9}$$

7. Write the following expression in radical form.

$$5x^{\frac{2}{3}}$$

8. Write the following expression in exponent (rational) form.

$$\sqrt[4]{17x^{32}}$$

9. Simplify the following expression.

$$\sqrt[4]{x^{20}y^{30}}$$

10. Solve the following equation.

$$2 + \sqrt{x - 4} = 6$$

Answer Key

1. $x = 5$

2. $5x^2$

3. $\dfrac{x - 3}{x - 2}$

4. $x = \dfrac{3}{4}$

5. $(5, \infty)$

6. $(9, 5)$

7. $5\sqrt[3]{x^2}$

8. $17^{\frac{1}{4}}x^8$

9. $x^5 y^7 \sqrt{y}$

10. $x = 20$