

Review Sheet for Test #2

Evaluate without using a calculator

1) $\text{Log}_5\left(\frac{1}{125}\right)$

2) $\text{Log}_9(6561)$

Solve the equation and round your answer to 3 decimal places.

3) $6^{2x} = 8249$

4) $2^{6x} = 6385$

Condense the expressions into a single logarithm.

5) $12\log(a) + \frac{1}{2}\log(b)$

6) $48\log(n) - 25\log(w)$

Translate into radical form and evaluate.

7) $64^{\frac{2}{3}}$

8) $32^{\frac{3}{5}}$

Rationalize the denominator.

9) $\frac{9}{5+\sqrt{7}}$

10) $\frac{3}{6-\sqrt{3}}$

Solve the equation and check your answer(s).

11) $\frac{x}{x-2} - \frac{9}{x^2-2x} = 0$

12) $\sqrt{4x+21} + 4 = 5$

Perform the indicated operation.

13) $2x^2\sqrt{20xy^3} - 4y\sqrt{80x^5y}$

14) $5a\sqrt{72a^2} + 4a^2\sqrt{18}$

Simplify.

15) $\left(\frac{7a^3b^{-5}}{3a^{-6}b^{-3}}\right)^{-3}$

16) $\frac{\frac{6}{x^2} + \frac{1}{x}}{\frac{36}{x^2} - 1}$

Solve the nonlinear system of equations.

17) $x^2 + 3y^2 = 28$

$3x^2 + 3y^2 = 60$

Perform the indicated operation

18) $\frac{x-2}{x-7} + \frac{-8x-14}{x^2-49}$

19) $\frac{6y+22}{5y+10} - \frac{y+4}{y+2}$

For the function given, find the roots (simplest form), the y-intercept, and the vertex. Then graph the function using the points found.

20) $y = x^2 + 2x - 4$

Put the equation of the circle into standard form. Then identify the center and radius. Lastly, graph the circle on an xy axis, labeling the center and 4 points.

21) $x^2 + y^2 - 8x - 12y + 9 = 0$

Answer Key

1) $\frac{1}{3}$

2) 4

3) $x = 2.516$

4) $x = 2.107$

5) $\text{Log}(a^{12}\sqrt{b})$

6) $\text{Log}\left(\frac{n^{48}}{w^{25}}\right)$

7) 16

8) 8

9) $\frac{5-\sqrt{7}}{2}$

10) $\frac{6+\sqrt{3}}{11}$

11) $x = 3, x = -3$

12) $x = -5$

13) $-12x^2y\sqrt{5xy}$

14) $42a^2\sqrt{2}$

15) $\frac{27b^6}{343a^{27}}$

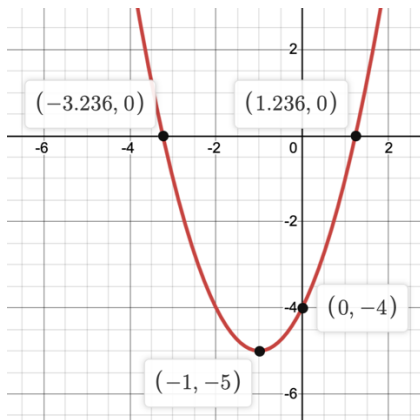
16) $\frac{1}{6-x}$

17) $(-4, -2), (-4, 2), (4, -2), (4, 2)$

18) $\frac{x+4}{x+7}$

19) $\frac{1}{5}$

20) Roots: $x = -1 - \sqrt{5}, -1 + \sqrt{5}$ y-intercept: $(0, -4)$ Vertex: $(-1, -5)$



21) $(x - 4)^2 + (y - 6)^2 = 43$ C: $(4, 6)$ r: $\sqrt{43}$

