**Math 3 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Unit 2 Review Sheet **Date** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| 1. a) What are solutions of a parabola also commonly called? Name all three terms.

b) What is the vertex of the following function? $y=-3x^{2}-12x+2$c) What is the maximum of the parabola associated with that function? d) What is the axis of symmetry? e) Solve $y=-3x^{2}-12x+2$ by any method. |
| 1. a) Given the graph of the parabola, find the standard form of the function. (use calculator)

 b) Convert the equation to vertex form. |
| 1. a) Use the discriminant to find how many and what type of roots $=4x^{2}-35x+49$ has.

 (rewrite as $0=ax^{2}+bx+c$) discriminant is $b^{2}-4ac$b) What are the factors of the function?(headphone method. Multiply the a and c, put it above the -35. What multiplies to ac and adds to -35)c) Solve the equation. (set = 0 and solve each factor) |
| 1. Simplify (pull out pairs of numbers and pairs of variables):
2. $\sqrt{48a^{13}b^{12}}$
3. $5\sqrt{32a^{5}b^{7}c^{10}}$
4. $\frac{-6}{2\sqrt{8}}$

(below, give it another $\sqrt{3}$ on top and bottom)1. $\frac{2}{\sqrt{3}}$
 | 5) Brianna launches a rocket in her science class that follows the path y = -16x2 + 64x + 5.1. Find the vertex of the function (use $x=-\frac{b}{2a}$).
2. What is the maximum height of the rocket? (y value of vertex)
3. When will her rocket reach its maximum height? (x value of vertex)
4. When will her rocket hit the ground? (x-intercept from graph)
5. What will the height of her rocket be after 1.5 seconds?

 (sub 1.5 into equation for x and solve for y) |

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| 6) Solve using the method given.**Factoring**

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| 1. $4x^{2}-64=0$ (GCF then diff of squares)
 | 1. 12x3 + 2x2 - 30x - 5 = 0 (group 1st pair and 2nd)
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  **Completing the Square** (Get constant on right side, divide middle # by 2 and box it in ( do this off to the side). Then square it and add it to both sides. Rewrite as perfect square (your variable and boxed in number squared), then solve. Don’t forget +/- and give both answers1. $x^{2}+2x=24$ b) $x^{2}+20x+36=4$

 **Quadratic Formula** (rewrite as $ax^{2}+bx+c$ then identify a, b, c and plug in formula) 1. $8x^{2}+4x-16=-x^{2}$ b) $8x^{2}+6x=-5$

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|  7) Simplify!1. $5\sqrt{48}$
2. $-3\sqrt{32}$
3. $\frac{5}{3\sqrt{2}}$
 | 8) Give 3 examples of the following types of numbers.1. Rational and whole
2. Rational, natural, and whole
3. Rational only
4. Rational integer
5. Irrational
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