Algebra 1 Final Review, spring 2014 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Show *all* work to receive full credit. Good luck!**

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| **For numbers 1-2, *simplify* the expressions**  |
| 1. -$3^{2}-4∙2+(6+4÷2)$
 | 1. $2\left(3x+7\right)-4\left(7x-2\right)+3x$
 |
| **For numbers 3-8, *solve* the equations**  |
| 1. $4x-2=22$
 | 1. $\frac{2x+7}{3}=9$
 |
| 1. $5x-12=7x+8$
 | 1. $\frac{3}{2}x+4=\frac{1}{3}$
 |
| 1. $\frac{3x+2}{5}=\frac{8x}{12}$
 | 1. $3x+7=2\left(x-4\right)+x$
 |
| **For numbers 9-10, *graph* the linear equations**  |
| 1. $y=\frac{5}{2}x-6$
 |  | 1. $y=-3x$
 |  |
| **For numbers 11-14, *identify* the *slope* and *y-intercept* of the linear equations**  |
| 1. $y=-2x+4$
 | 1. $y=-5$
 |
| 1. $y=-\frac{1}{3}x$
 | 1. $ 3x-3y=-12$
 |
| **For numbers 15-18, *write* the equation of the line in *slope-intercept* form using the given information**  |
| 1. Slope: $-\frac{3}{2}$

y-intercept: 2 | 1. Slope: 4

Passes through the point: (-2 , -13) |
| 1. Passes through the points (-6 , -8) and (3 , -2)
 | 1. Has the given graph
 |  |
| **For numbers 19-20, *solve* the inequality, then *graph* the solution range on the number line** |
| 1. $6-x>-4$
 | 1. $\frac{1}{2}x+2\geq 2$
 |
|  |  |
| **For numbers 21-24, *solve* the *system of linear equations*** |
| 1. $x+y=4$

$$2x-3y=13$$ | 1. $y=2x-3$

$$3x-2y=10$$ |
| 1. $-5x+3y=11$

$$x-2y=2$$ | 1. $y=2x+4$

$$3y-6x=12$$ |
| 1. ***Graph* the *linear inequality***
 | 1. ***Graph* the *system of linear inequalities***
 |
| $$2x-4y>8$$ |  | $$y\leq -2x+6$$$$x>-5$$ |  |
| **For numbers 27-28, *find the zeroes* of the quadratic function by *factoring*** |
| 1. $0=x^{2}-8x-20$
 | 1. $0=2x^{2}+5x-12$
 |
| **For numbers 29-30, *find the zeroes* of the quadratic function by using the *quadratic formula*** |
| 1. $0=-x^{2}+2x+8$
 | 1. $0=3x^{2}-10x+5$
 |
| **For numbers 31-32, *graph* the quadratic functions** |
| $$y=x^{2}+4x-5$$ |  | $$y=-2x^{2}-12x-10$$ |  |
| **For numbers 33-36, *simplify* using only positive exponents** |
| 1. $(3x+2)(x-6)$
 | 1. $\left(x-3\right)^{2}$
 |
| 1. $\frac{-2x^{5}y^{3}}{4x^{7}y^{-2}}$
 | 1. $\left(3ab^{3}c^{-2}d^{0}\right)^{3}$
 |
| **Use the given senario to answer questions 37-40.****You have a bag of marbles. There are 5 red, 3 blue, 6 green, and 2 black marbles.** |
| 1. What is the probability of choosing a red marble at random from the bag?
 | 1. What is the probability of choosing a black marble or a green marble at random from the bag?
 |
| 1. What is the probability of picking a blue marble, setting it aside, and then picking another blue marble?
 | 1. What is the probability of picking a white marble out of the bag at random?
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| 1. **Fair Problem**: It costs $12 for admission into the fair. It costs $3 per ride. (a) How much wil it cost (total) to ride on three rides? (b) How much would it cost to go on *x* number of rides? (c) If you had $42 to spend at the fair, how many rides could you go on?
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| 1. **Archery:** Katniss Everdeen wants to know if she can shoot an aarow over the top of a tree. The equation of the arrow’s height after *t* seconds can be modled with this equation $h=-16t^{2}+64t+3$. If the tree is 66 feet tall, wil Katniss be able to clear the top of the tree?
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| 1. **Baseball game**: Mr Marcus went to the Giant’s game. While he was there, he bought a soda and an order of garlic fries and spent $14. Later that night, he went back and ordered a soda and two orders of garlic fries and spent $22. How much did each soda cost Mr Marcus at the game?
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| 1. **T-shirt Business**: The HHS leadership class is considering purchasing a printing machine for $3,500. It would cost the class $4 to make each shirt, and they can sell them for $10 each. How mnay shirts would they need to sell to cover the cost of purchasing the machine?
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