January 2014

- Remember that if the answer you get is different from the date… **you need to do the problem again!**
- **Do not** leave any question blank. If you don't know how to solve it… **ask for help!**

Algebra 2

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Find the greatest element of the range of the function $f(x) = -x^2 + 1$.	2 Find the greatest element of the domain of the function of the function $f(x) = \sqrt{-x+2}$.	3 Two trains leave a station at the same time. One train travels east at 50 mph. The other travels west at 55 mph. After how many hours will the trains be 315 miles apart?	4 Simplify $\frac{(x^3)^2}{x^2}$.
5 Simplify $\sqrt{625}$.	6 Solve for x. $11(-2x+8) = 7(-5x+26) - 16$	7 What is the slope of a line parallel to the line through $(-1, 4)$ and $(0, 11)$?	8 Solve for x. $\frac{x+1}{9} = \frac{2x-9}{7}$	9 What is the slope of a line perpendicular to the line through $(-9, -9)$ and $(18, -12)$.	10 Write the equation of a parabola whose vertex is at $(-10, 10)$.	11 Simplify $\frac{(x^{-3}y^4)^2}{x^5y^{-3}z^0}$.
12 Draw a function with a range of $-12 \leq x < 12$ and write the range in interval notation.	13 Draw a function with a domain of $-13 < x \leq 13$ and write the domain in interval notation.	14 An object is launched at 19.6 m/s from a height of 58.8 m. Let $s(t) = -4.9t^2 + 19.6t + 58.8$ describe the object's height, s, at t seconds. How high is it after 5.625 seconds?	15 Write the equation of a cubic function that has been shifted left 1 and up 5.	16 Simplify $\frac{8\sqrt{8}}{\sqrt{2}}$.	17 A number is doubled and then increased by 42. The result is 76. What is the number?	18 Find the y-intercept of the line through $(1, 21)$ and parallel to the line through the points $(5, 18)$ and $(6, 21)$.
19 Find the y-intercept of the line through $(2, 16)$ and perpendicular to the line through the points $(6, 21)$ and $(-3, 15)$.	20 If Alice sells 3 phone packages in one hour, she earns \$35. If she sells 8, she makes \$60. How much money does Alice make if she sells zero?	21 Bob is a waiter. He makes \$9.32 per hour, plus tips, which average \$8.80 per table. One day, Bob worked 10 hours and made \$278. How many tables did Bob serve?	22 Find the equation of the line through $(4, 26)$ and parallel to $y = x + 9$.	23 Find the equation of the line through $(2, 19)$ and perpendicular to $y = \frac{1}{2}x - 8$.	24 Write in interval notation: $2 < x \leq 4$	25 Simplify $\frac{4\sqrt{15}}{\sqrt{12}}$.
26 Simplify $\frac{(x^{-1}y^3)^{-4}}{x^2y^{-18}}$	27 Let $f(x) = 5x^3 - 3x^2 + 18x - 10.5$. Find $f(1.5)$.	28 A rectangle has side lengths 9 and $\sqrt{703}$. What is the distance from the bottom-left corner to the top-right corner of the rectangle?	29 A car wash charges \$58 for one hour and \$87 for two hours. Write an equation representing the cost, y, of washing a car for x hours.	30 Let $f(x) = 6x - 18$ and $g(x) = 4x^2 + 5x - 1$. Find $-2f(5) + 2g(2) + 4$.	31 Find the y-intercept of the line through $(5, 35)$ and parallel to the line through the points $(4, 29)$ and $(9, 33)$.	You have to believe in yourself.