MARCH 2016 — ALGEBRA 2

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 Find the value of z in the system below.	**2** Find the value of y in the system below. $$\begin{cases} 6x - 4y - 5z = 5 \\ -3x - 5y + 3z = -16 \\ 2x - 6y + z = -5 \end{cases}$$	**3** Find the value of x in the system below.	**4** Solve for x. $$x^2 - 8x + 30 = -2$$	**5** Find the y coordinate of the solution to the system below. $$\begin{cases} 5x - 3y = 7 \\ 6x - 5y = 0 \end{cases}$$
6 Simplify $$3\sqrt{54} - 3\sqrt{6}$$	**7** Find the maximum or minimum of the parabola represented by $$y = \frac{1}{3}x^2 - 4x + 19.$$	**8** Find the axis of symmetry of the parabola represented by $$f(x) = x^2 - 16x + 61.$$	**9** Let $$f(x) = x^5 - 14x^4 + 22x^3 + 13x^2 + 141x - 99.$$ Use synthetic substitution to find $f(12)$.	**10** Find the zeroes of $$f(x) = x^3 - 10x^2 + 4x - 40.$$ What is the only real zero?	**11** Find the y-intercept of the line thorough $(-5, -4)$ and perpendicular to the line represented by $y = -\frac{1}{3}x + 3$.	**12** Solve and write your answer in interval notation. $$7|6x - 9| + 2 \le 23$$
13 Find the larger of the solutions to $$-2|-x + 5| - 5 = -21$$	**14** Let $$f(x) = -3x^4 + 8x^3 + x^2 + 14x - 10.$$ Use synthetic substitution to find $f(3)$.	**15** Simplify $$\frac{15\sqrt{75}}{\sqrt{5}}$$	**16** Find the y-intercept of the line through the point $(15, -4)$ and parallel to the line through the points $(14, 4)$ and $(20, 12)$.	**17** Let $$f(x) = 2x^2 - 4x + 9.$$ Write $f(x)$ in vertex form and state the vertex of the parabola.	**18** Solve for x. The product of your solutions should be 18. $$9 - 5|2x - 9| = -6$$	**19** Find the zeroes of $$f(x) = x^4 - 82x^2 + 81$$
20 Find the remainder when $50x^5 + 2052x^4 - 1916x^3 - 1646x^2 + 1638x - 104$ is divided by $50x - 48$	**21** Factor $$x^3 - 21x^2 + 21x - 441$$	**22** Solve for x. $$x^2 - 44x = -484$$	**23** Solve and graph. $$21(x - 36) \le 39(x - 30)$$	**24** Find the y-intercept of the line $\perp$ to $\overline{AB}$ & through its midpoint. A has coordinates $(2, 3)$ & B has coordinates $(11, 6)$.	**25** Solve for x. $$4x^2 - 80 = 0$$	**26** Simplify $$\frac{13 \cdot 2^{-1}x^3y^{-2}}{x^{-3} \cdot 2xy^4 \cdot (2x^{-1}y^4)^{-3}}$$
27 Simplify $$\frac{4\sqrt{14}}{\sqrt{8}}$$	**28** Simplify and find the sum of the exponents. $$(x^2y^4)^4 \cdot xy^3$$	**29** Find the x-intercept of the line represented by the equation $$y = -\frac{3}{4}x + 18.75$$	**30** Find the zeroes of $$f(x) = x^3 - 31x^2 + 28x + 60.$$ What is the largest zero?	**31** Solve for x. The difference between your solutions should be 31. $$x^2 - 71x = -1020$$	**ALGEBRA 2** • **Do not** leave any question blank. If you don't know how to solve it… **ask for help!** • **Show all your work!** The process is more important than the answer.	