

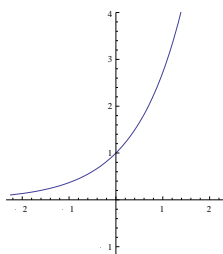
## Gateway Test Answers

### Algebra - Test 1A

1.  $\frac{3x-2}{\sqrt{x-1}}$       2.  $\frac{1}{y(y-k)}$       3.  $x^3 + \frac{4}{\sqrt{3}}x^{3/2} + \frac{4}{3}$
4.  $\frac{1 \pm \sqrt{21}}{2}$       5.  $-8$       6.  $5x - 2y - 17 = 0$       7.  $\frac{1-y}{x-1}$
8.  $(x+1)^2 + (y-3)^2 = \frac{9}{2}$ , center  $(-1, 3)$ , radius  $\frac{3}{\sqrt{2}}$       9.  $\frac{5}{3}$       10.  $\left[-\frac{3}{2}, \infty\right)$

### Exponential and Logarithmic Functions - Test 2A

1.  $\frac{15}{7}$       2.  $\ln 3$       3.  $\frac{3}{4}$       4.  $3$       5.  $5$



6.  $(e^{-2}, 0)$       7.  $\ln(4x^5 - x - 1) + \frac{1}{2}\ln(x-7) - 3\ln(x^2 + 1)$
9.  $\emptyset$ , because  $\frac{e}{1-e}$  is extraneous      10.  $\left(-\frac{2}{3}, \infty\right)$

### Trigonometry - Test 3A

1.  $-\frac{13}{12}$       2.  $0, \frac{\pi}{2}, \pi, \frac{3\pi}{2}$       3.  $2|\sec \theta|$
4.  $\cos \theta$       5.  $\frac{\sqrt{15}}{8}$       6.  $0, \frac{2\pi}{3}, \pi, \frac{4\pi}{3}$       7.  $\sqrt{\frac{2}{3}}$
8.  $r = -3\cos \theta$       9.  $\frac{\sqrt{9-x^2}}{x}$       10.  $-\frac{\pi}{6}$