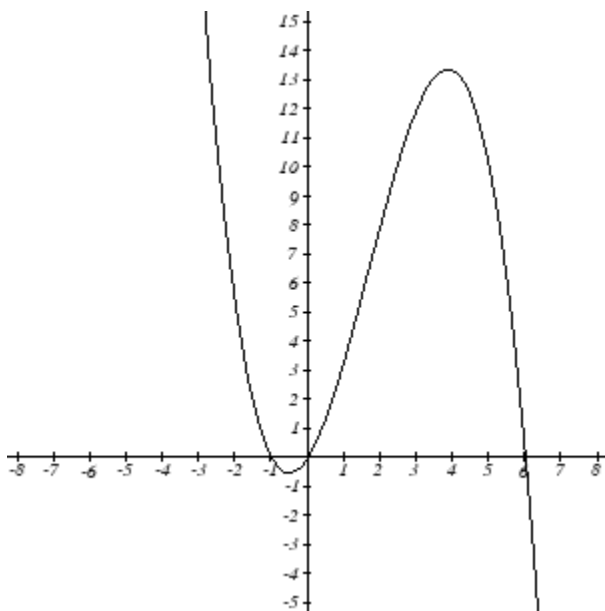


Math& 151 (Calculus) Entrance Exam Review - Sample

Use this sample to help determine your placement. The Entrance Exam Review is online at: <http://www.wamap.org/diag> (click on GRCC Entrance Exam Review). Password is: **grccee**. Entrance Exams are administered in the GRCC Assessment Center (ZWC building). The exams are online utilizing the WAMAP system.

- 1) Find an equation in slope intercept form for the line with slope $m = \frac{1}{5}$ and which goes through the point $(-7,-5)$.
- 2) Solve for x : $\log_3 x - \log_3 4 = 4$
- 3) Below is a graph of $f(x)$. Determine all intervals of x for which $f(x) > 0$
x-intercepts: $(-1,0)$ and $(6,0)$. y-intercept: $(0,0)$



- 4) Find the difference quotient $\frac{f(x+h) - f(x)}{h}$ for the function $f(x) = 8x - x^2$ and simplify your answer.
- 5) Given that $f(x) = x + 5$ and $g(x) = 2x - x^2$, calculate $(g \circ f)(x)$
- 6) Find the domain of the function $f(x) = \frac{x}{\sqrt{x-3}}$.
- 7) Find the solution of the exponential equation $e^{4x+6} - 3 = 3$
- 8) Find all roots of the polynomial $p(x) = x^3 - 2x^2 - 63x$

9) Viewing the function $f(x) = a\sqrt{x-b} + c$ as a transformation of the basic square root function $y = \sqrt{x}$, what property of $y = \sqrt{x}$ is altered by the parameter b ?

10) Find the inverse of $f(x) = \frac{-5x}{x+2}$ (Ignore domain and range restrictions)

11) On which subinterval of the interval $[0, 2\pi]$ is $\tan(\alpha)$ negative?

12) Which of the following is equivalent to $\log\left(\left(\frac{5x}{y}\right)^2\right)$

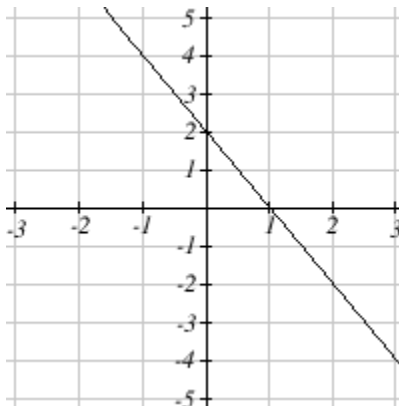
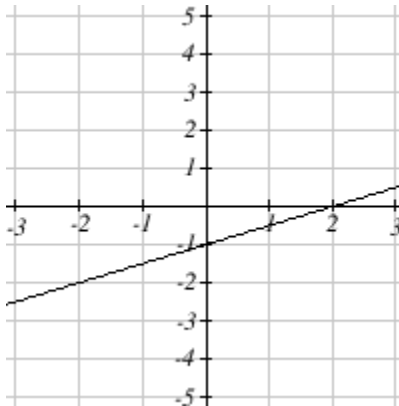
$\log(5x) - 2\log(y)$ $2\log(5x) - \log(y)$ $5^2 \log(x) - 2\log(y)$ $2(\log(5x) - \log(y))$

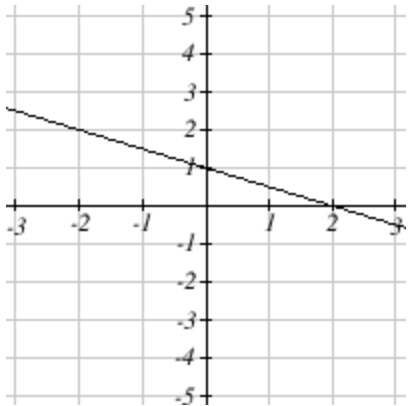
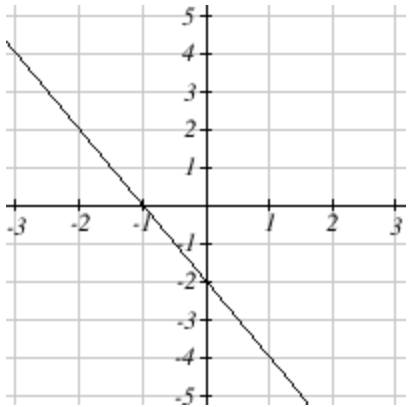
13) Convert 2 radians into degrees.

14) Simplify the trigonometric expression:

$$\frac{1}{\cos\alpha} - \tan^2 \alpha$$

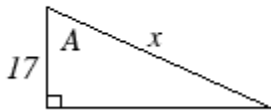
15) Which of the following is a graph of the inverse of $y = -0.5x - 1$?





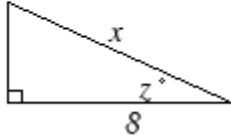
16) Find the maximum value (largest output) of $y = 3\sin\left(\frac{1}{8}x\right) - 5$, on the interval $-2\pi \leq x \leq 2\pi$

17) Express the angle, A, as a function of x for the right triangle shown.



Possible answers: $\arcsin\left(\frac{x}{17}\right)$ $\arccos\left(\frac{17}{x}\right)$ $\sec\left(\frac{17}{x}\right)$ $\cos(x)$

18) Given the right triangle below, if $z = 30^\circ$ find the length of side x . Triangle is not drawn to scale.



19) Solve for x : $\cos^2(x) - \cos(x) = 0$ where $0 \leq x \leq 2\pi$

20) Given the triangle below, find the length of side x . Triangle is not drawn to scale.

