

Answer Key to Precalculus Practice Exam

- (a) 3 (b) 0 (c) $-2s - 3$
- $a^2 + 14a + 52$
- (b)
- $\frac{4-\sqrt{14}}{2}, \frac{4+\sqrt{14}}{2}$
- 0, -2, 1
- (4, 0), (0, 10), $y = 10 - \frac{5x}{2}, -\frac{5}{2}$
- $y = 4 - x$
- (a)
- 1, 8
- $r = \sqrt[3]{\frac{3v}{4\pi}}$ or $\left(\frac{3v}{4\pi}\right)^{\frac{1}{3}}$
- $R_2 = \frac{RR_1}{R_1 - R}$
- $\frac{3x-5}{(x-2)(x+2)}$
- $\frac{x-5}{x+6}$
- $x^2(x+4)$
- $\frac{2}{ab}$
- $10\sqrt{3} + 3\sqrt{30}$
- (a) -4 (b) $\frac{1}{2}$ (c) -1
- (a) 14 (b) 27 (c) $\sqrt{3}$
- (a) $-\frac{1}{2} \ln 7$ (b) -0.972955
- (a) $\log_6 25 = 2x$ (b) $A = e^5$
- (a) $\frac{1}{4}(\ln(39) - 1)$ (b) 0.665890
- 4
- $5 \log(x) + \log(y) - \log(z)$
- $\log\left(\frac{x^3y}{z}\right)$
- $\frac{5u}{v^2}$
- $(x-5)^2 + (y+4)^2 = 16$
- (a) $16x - 15$ (b) $-x^4 + 4x^2 - 2$
- $a = 26\sin\theta, b = 26\cos\theta$
- $\cos\left(\frac{2\pi}{3}\right) = -\frac{1}{2}, \sin\left(\frac{2\pi}{3}\right) = \frac{\sqrt{3}}{2}$
- $\sin x$
- 7
- amplitude = 2, period = 12π , graph (c)
- $\cos\theta = \frac{5}{13}, \tan\theta = -\frac{12}{5}, \operatorname{cosec}\theta = -\frac{13}{12},$
 $\sec\theta = \frac{13}{5}, \cot\theta = -\frac{5}{12}$
- $f^{-1}(x) = \frac{x+4}{2}$
- (a) $f(x) = (x-4)^2 - 8$ (b) (i),
(c) $f(\underline{4}) = -8$, Minimum value