

Solve by changing to the same base or by using log properties.

1. $4^{x+28} = 64^{5x}$

$x = 2$

2. $7^{3x} = 19$

$x = 0.50$

3. $\log_8(5x - 8) = 3$

$x = 104$

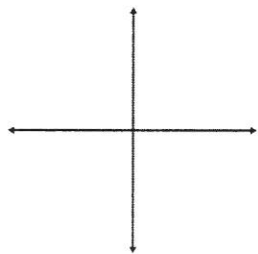
4. Joe invested \$25,000 at a 4% interest rate, compounded continuously.

a. How much will he have after 5 years?

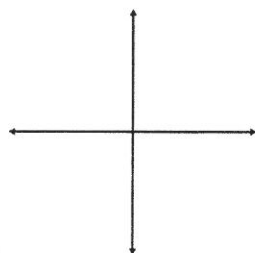
$\approx \$30,535.07$

b. When will he have \$40,000?

$\approx 11.75 \text{ yrs}$

5. Given $-\frac{7\pi}{3}$ a. Name a positive co-terminal angle: $\frac{5\pi}{3}$ b. Name a negative co-terminal angle: $-\frac{\pi}{3}$ or $-\frac{13\pi}{3}$ c. Name the reference angle: $\frac{\pi}{3}$

6. Given the ordered pair, find the value of the 6 trig functions:

 $(-24, 7)$ 

$\sin\theta = \frac{7}{25}$

$\csc\theta = \frac{25}{7}$

$\cos\theta = -\frac{24}{25}$

$\sec\theta = -\frac{25}{24}$

$\tan\theta = -\frac{7}{24}$

$\cot\theta = -\frac{24}{7}$

7. Given $f(x) = 6x^4 - 8x^3 + x - 5$, name the following WITHOUT USING A GRAPHING CALCULATOR:

a. Degree 4

b. Leading coefficient 6

c. End behaviors Left: $+\infty$ Right: $+\infty$

8. Write the equation of a quadratic function with a reflection, a vertical translation of -5, a horizontal translation of -2, and a dilation of 4.

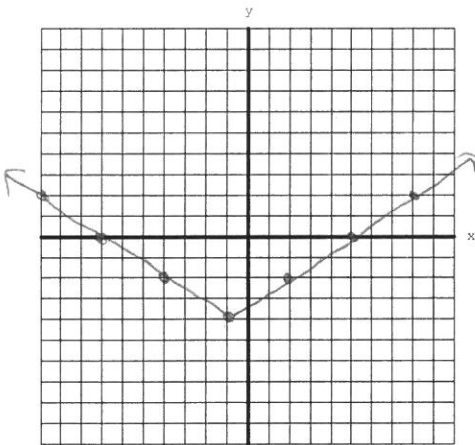
$$y = -4(x+2)^2 - 5$$

9. Find $f^{-1}(x)$ if $f(x) = (x-2)^2 + 5$.

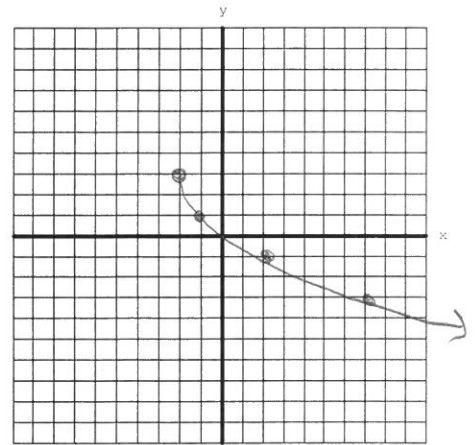
$$f^{-1}(x) = \sqrt{x-5} + 2$$

Graph #10 and #11.

10. $f(x) = \frac{2}{3}|x+1| - 4$



11. $f(x) = -2\sqrt{x+2} + 3$



12. Given $f(x) = \begin{cases} -\frac{3}{4}x + 2 & x \leq -4 \\ 2.5 & -2 < x \leq 3 \\ 2(x-4)^2 - 1 & x > 3 \end{cases}$

Find:

$$f(3) = 2.5$$

$$f(6) = 7$$

$$f(-3) = \text{D}$$