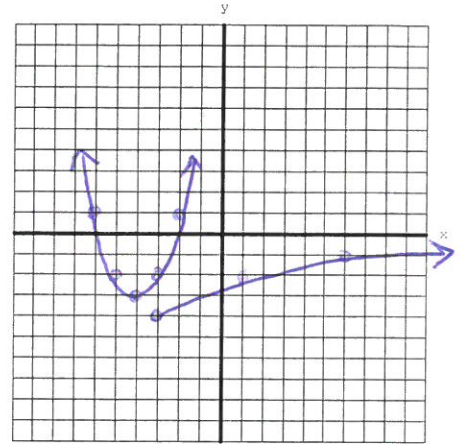


1. Find the inverse, then graph both.

$$f(x) = \sqrt{x+3} - 4$$

$$f^{-1}(x) = \underline{(x+4)^2 - 3}$$

Graph $f(x)$ and $f^{-1}(x)$ 

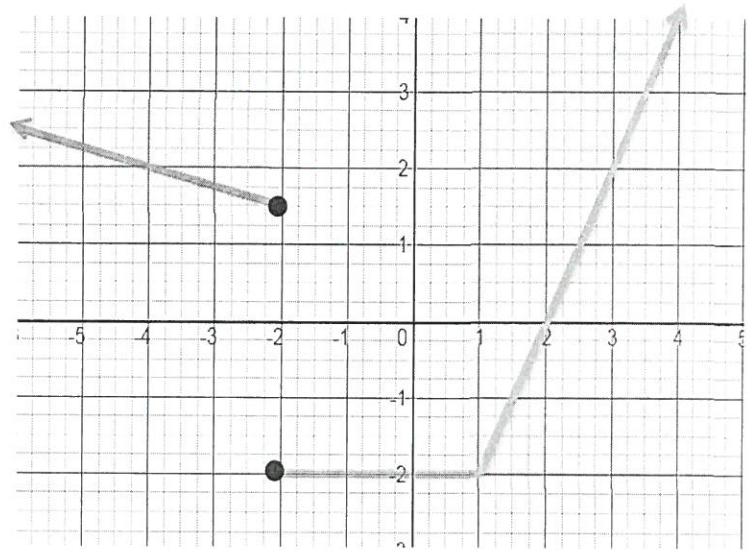
2. Is this a function?
- No

What is the domain?

$$\underline{(-\infty, \infty)}$$

What is the range?

$$\underline{[-2, \infty)}$$



3. Simplify. Be sure to list restrictions.

$$\frac{3x}{x^2 + 8x + 12} + \frac{6}{4x + 8}$$

Answer:

$$\frac{9}{2(x+6)}$$

Restrictions:

$$x \neq -2, -6$$

4. Given $x^4 - 5x^3 + 10x^2 - 30x + 24$ with factors of $(x - 4)$ and $(x - 1)$, find the roots.

Real roots: $x=4$
 $x=1$

Imaginary roots: $x = \pm i\sqrt{6}$

5. Simplify.

a. $\sqrt{-160}$

$$4i\sqrt{10}$$

b. $\sqrt{275}$

$$5\sqrt{11}$$

6. Your parents started you a savings account when you were born. They deposited \$10,000 in an account that pays 2.1% annual interest, compounded monthly. Use $A = P\left(1 + \frac{r}{n}\right)^m$.

a. How much money did you have when you turned 18?

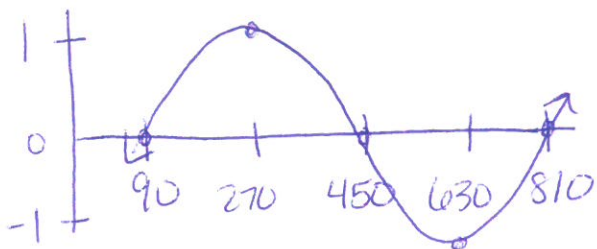
$$\$14,588.18$$

b. When did you have \$11,500?

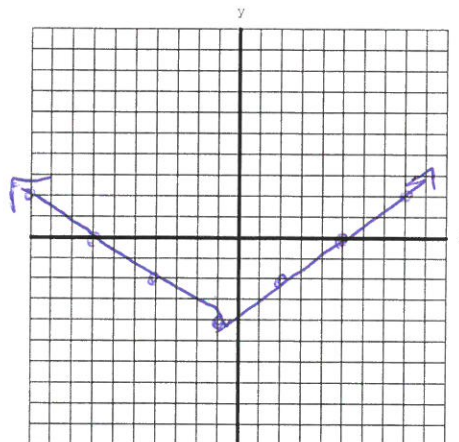
$$t = 6.7 \text{ years}$$

Graph.

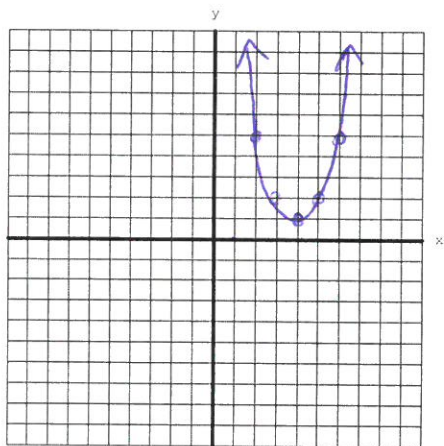
7. $f(x) = \sin 1/2(\theta - 90)$



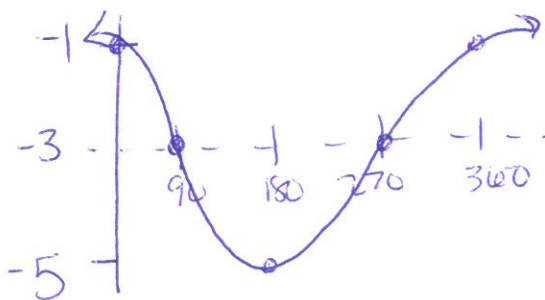
8. $f(x) = \frac{2}{3}|x + 1| - 4$



9. $f(x) = (x - 4)^2 + 1$



10. $f(x) = 2\cos\theta - 3$



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

11. $2^{x+7} = 16^{x+2}$

$x = -\frac{1}{3}$

12. $\log_9(17x - 4) = 2$

$x = 5$

