Alg 2 Unit 3 HW #5 Name _____

Simplify.

1. $(3-4i)(-2-3i)$

2. i^{91}

3. $3i(2i^2-6i)$

4. $\frac{6x-17}{x^2-5x+6}-\frac{5}{x-2}$

5. $\frac{9x^2-16}{12x+16}*\frac{14x-28}{x^2+10x-24}$

Solve.

6. $9x^2+9x-4=0$

7. $\sqrt{x}+4=\sqrt{x+32}$

8. $6-2\sqrt{5x+1}=-12$

Divide.

9. $(12x^4 - 8x^3 + 7x^2 - 10x + 5) \div (4x^2 - 3)$

Find all zeroes.

10. $f(x) = x^4 - 16x^3 + 97x^2 - 254x + 232$

11. Given the following functions: $a(x) = \frac{x-3}{4}$ $b(x) = \frac{1}{5}x - 2$ $c(x) = 4x + 3$

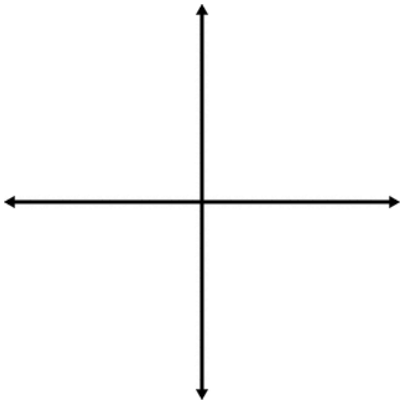
a. Find $c(b(-10))$

b. Find $b^{-1}(x)$

c. Prove that $a(x)$ and $c(x)$ are inverses using compositions

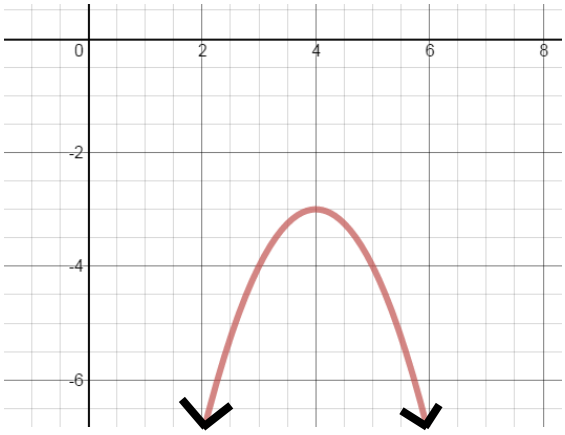
12. Identify the vertical asymptotes (non-removable discontinuities) and/or holes (removable discontinuities) that would appear on the graph of each function.

$$f(x) = \frac{4x^2 + 13x + 10}{x^2 + x - 2}$$



13. Given the following graphs, name the following:

a.



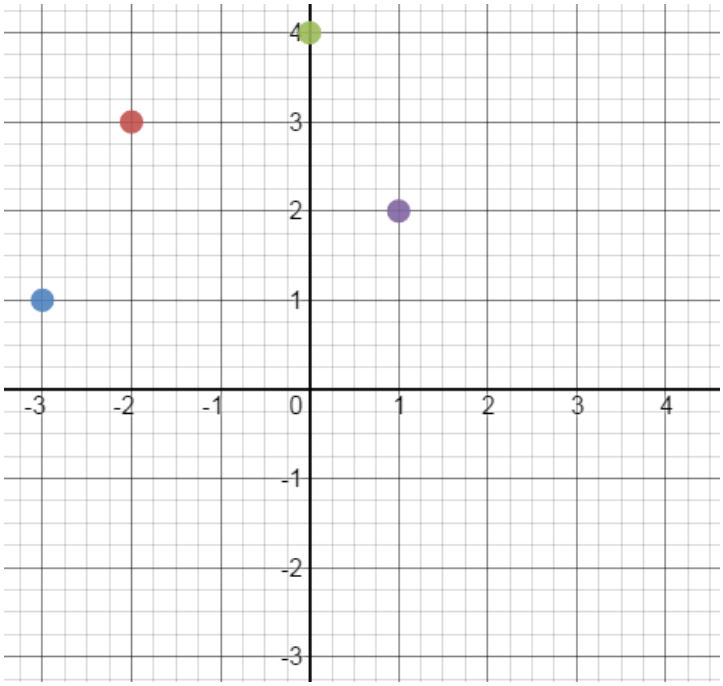
Domain:

Range:

Function (Y or N):

1 to 1 (Y or N):

b.



Domain:

Range:

Function(Y or N):

1 to 1 (Y or N):

Sketch the inverse.

Domain:

Range:

Function(Y or N):

1 to 1 (Y or N):