

Snow Packet: Day 1

Identify the domain of each.

1) $f(x) = -\frac{1}{x+1}$

2) $f(x) = \frac{1}{2x^2 + 6x}$

3) $f(x) = \frac{3}{x^2 - x - 6}$

4) $y = \sqrt{x+4}$

5) $y = \sqrt{x-3}$

6) $y = \sqrt[3]{x+5}$

Find the inverse of each function.

7) $g(x) = -3x - 4$

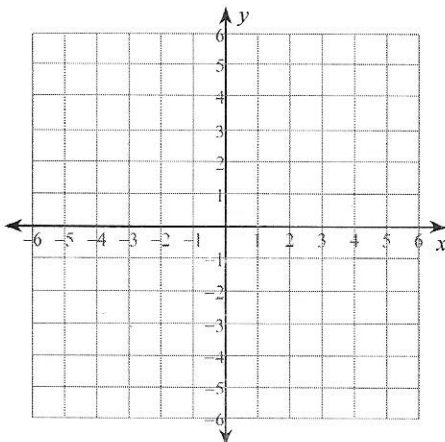
8) $f(x) = -1 + 2x^5$

9) $f(x) = (x+2)^3$

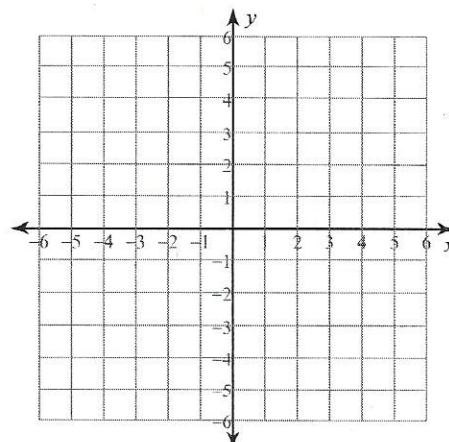
10) $f(x) = x^3 + 2$

Graph each equation without a calculator and describe all transformations involved.

11) $y = -3|x-1| + 3$



12) $y = 2|x+1| + 2$



Pre-Calculus: SNOW PACKET: Day 2

Composition of Functions Worksheet

Name _____

I. $f(x) = 2x - 1$ $g(x) = 3x$ $h(x) = x^2 + 1$ Compute the following:

1. $f(g(x))$

2. $f(h(x))$

3. $g(h(x))$

4. $h(f(x))$

5. $g(f(x))$

6. $h(g(x))$

7. $f(f(x))$

8. $h(h(x))$

9. $g(g(x))$

II. $f(x) = 9 - x$ $g(x) = x^2 + x$ $h(x) = x - 2$ Compute the following:

10. $g(f(3))$

11. $f(g(4))$

12. $h(f(-6))$

13. $f(h(-3))$

14. $h(g(11))$

15. $g(h(-9))$

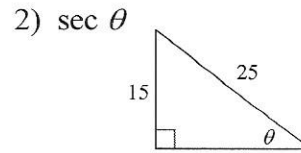
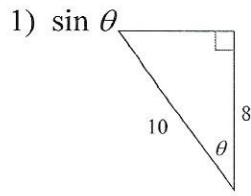
16. $g(g(5))$

17. $h(h(13))$

18. $f(f(-8))$

Snow Packet: Day 3

Find the value of the trig function indicated.



3) Find $\tan \theta$ if $\sec \theta = \frac{5}{4}$

4) Find $\sin \theta$ if $\csc \theta = \frac{5}{3}$

Simplify.

5) $(-6 - 4i) - (-1 - i)$

6) $(1 - 2i) - (-5 + 2i)$

7) $(8 - 7i) + (-2 + 7i)$

8) $(3 + 7i) + (3 + 7i)$

9) $(i) - (5 + 5i) - 6$

10) $(-5 - 7i)(-8 + 5i)$

11) $(8 + i)^2$

12) $(3 + 5i)^2$

13) $(-1 - 5i)(3 - 5i)$

14) $(-4 - 6i)(5 - 6i)$

Solve each equation with the quadratic formula. Write solutions as complex numbers in standard form.

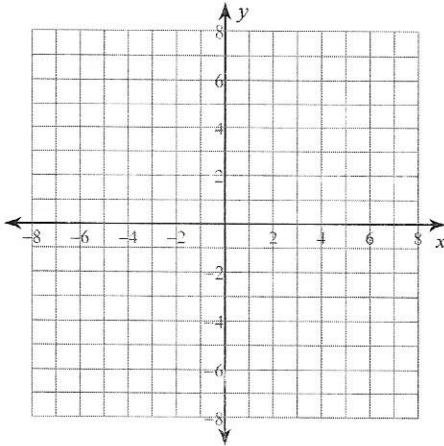
15) $5k^2 - 4k + 10 = 0$

16) $3x^2 - 6x + 6 = 0$

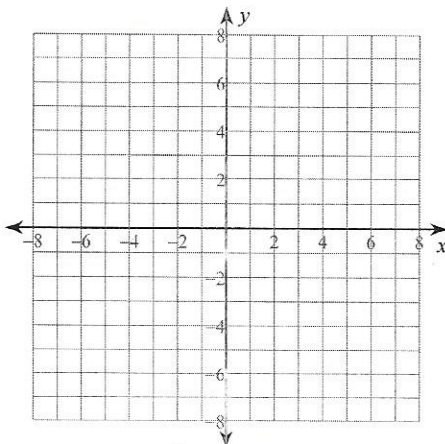
Snow Packet: Day 4

Identify the vertical asymptotes, x-intercepts, y-intercepts and end behavior horizontal asymptote of each. Then sketch the graph.

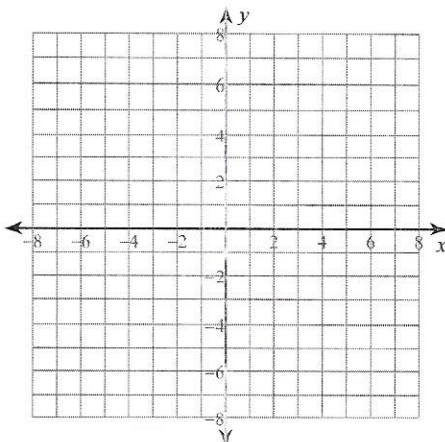
$$1) f(x) = \frac{x^2 + 3x - 4}{2x^2 + 6x}$$



$$2) f(x) = \frac{x + 2}{x + 1}$$



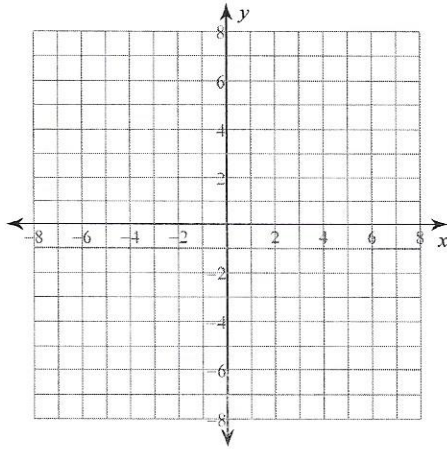
$$3) f(x) = \frac{x^3 - x}{-4x^2 + 16}$$



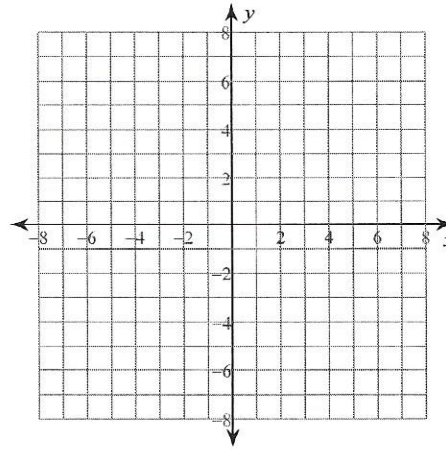
Snow Packet: Day 5

Identify the center and vertices of each ellipse. Then sketch the graph.

1) $\frac{x^2}{9} + \frac{y^2}{4} = 1$

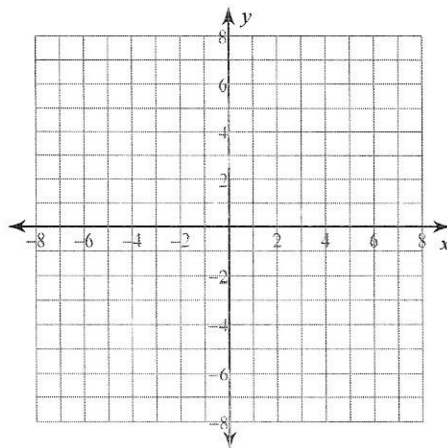


2) $\frac{(x-1)^2}{25} + \frac{(y+1)^2}{36} = 1$

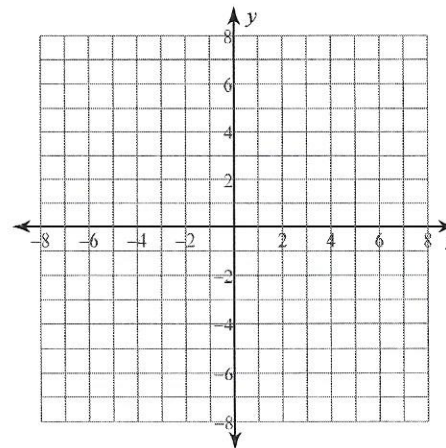


Identify the vertices, foci, and asymptotes of each hyperbola. Then sketch the graph.

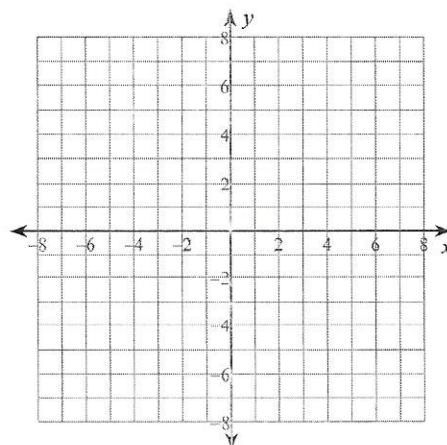
3) $\frac{x^2}{25} - \frac{y^2}{16} = 1$



4) $\frac{x^2}{9} - \frac{y^2}{16} = 1$



5) $\frac{(y-2)^2}{9} - \frac{(x+1)^2}{16} = 1$



6) $y^2 - \frac{x^2}{25} = 1$

