Honors Math 2 Name_____

Unit 8 day 4 Period_____Date_____

Identify the x-intercept(s), vertical asymptote(s) and horizontal asymptote of the graph of the function.

1. $y = \frac{x^2 + 2x - 15}{x^2 - 36}$

2. $y = \frac{x^2 - 2x - 3}{2x^2 - 8}$

3. $y = \frac{2x - 1}{x^2 + 7}$

4. $y = \frac{4x - 8}{x^2 - 2x + 1}$

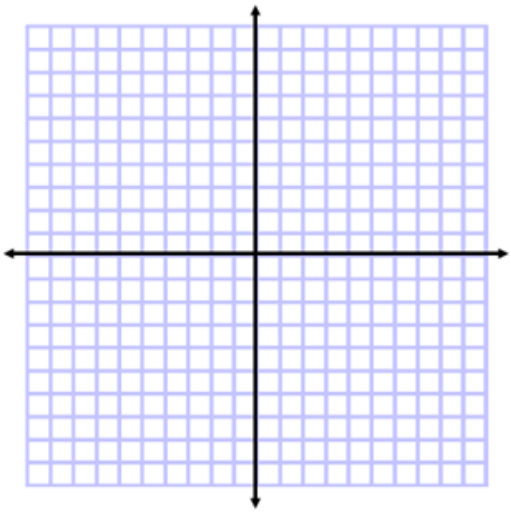
5. $y = \frac{2x^2 + x - 3}{x^2 - x - 20}$

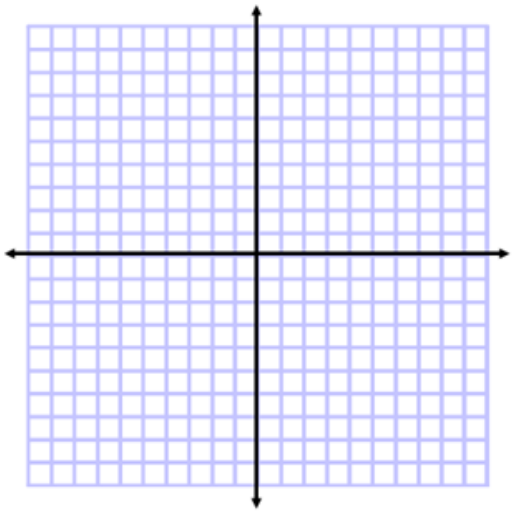
6. $y = \frac{x - 3}{x^2 - 16}$

Graph the function. Show all asymptotes and intercepts.

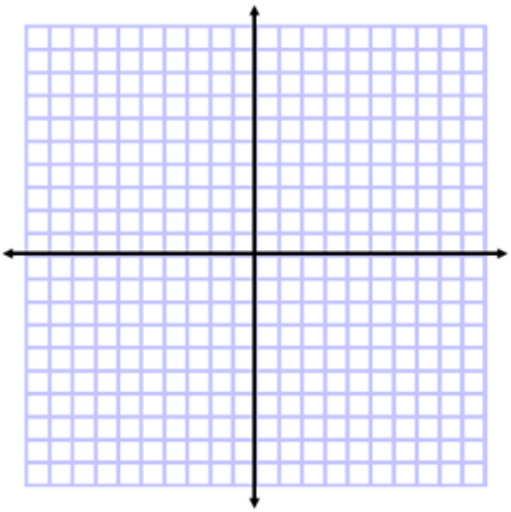
7. $h(x) = \frac{2x + 4}{x^2 - 16}$

8. $f(x) = \frac{2x^2}{x^2 + 5x + 4}$

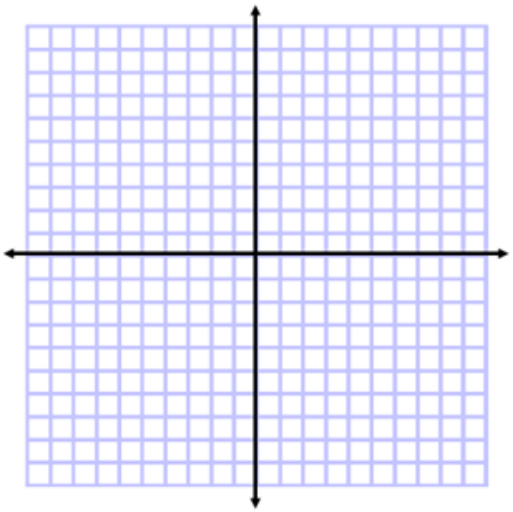




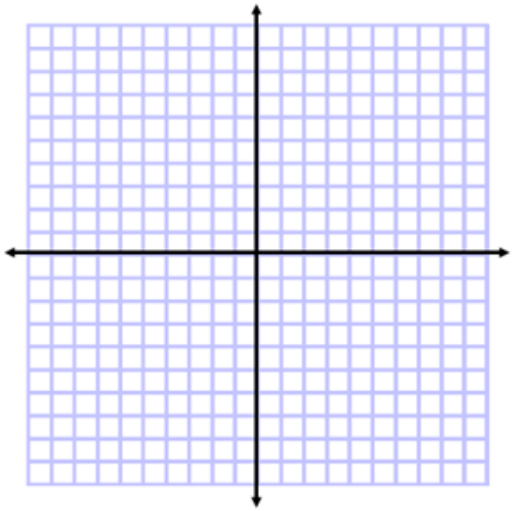
9. $f(x) = \frac{x^2 - 3}{2x^2+5x-12}$



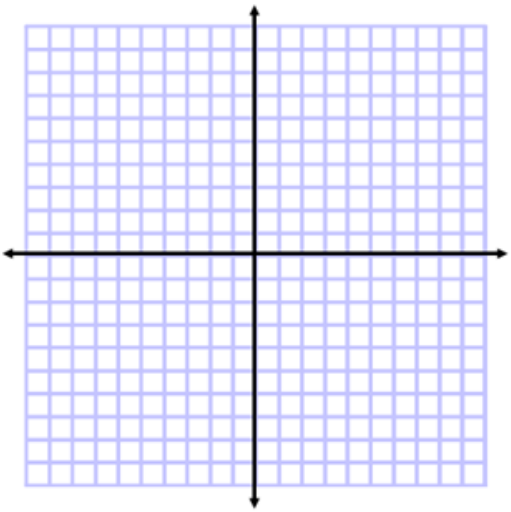
10. $g(x) = \frac{5x^2+7x+2}{2x^2 - 8}$



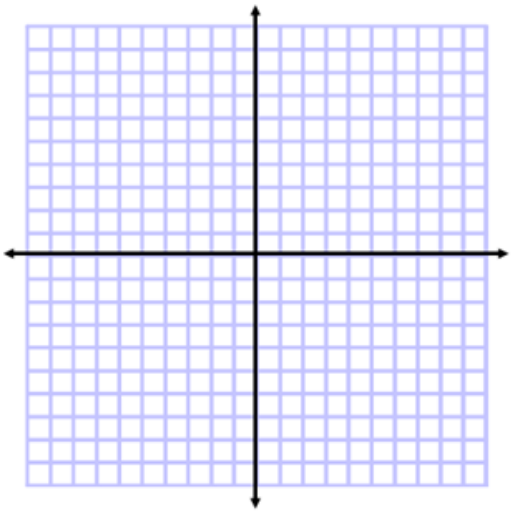
11. $f(x) = \frac{2x^2 + 3}{x^3}$



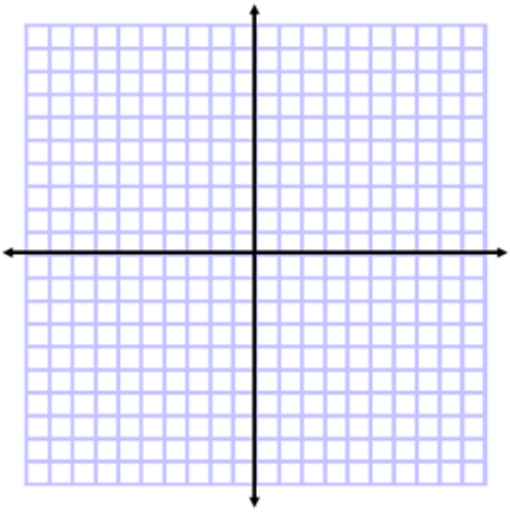
12. $h(x) = \frac{3x^2 + 10x - 8}{x^2 + 4}$



13. $g(x) = \frac{x-4}{x^2 - 3x}$



14. $f(x) = \frac{x^2-10}{x^2 + 3}$



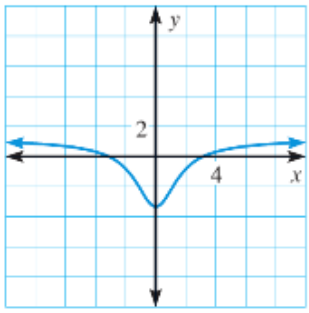
MATCHING GRAPHS **Match the function with its graph.**

15. $y = \dfrac{-10}{x^2 - 9}$

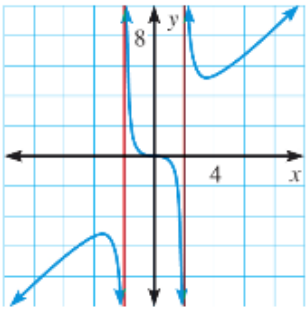
16. $y = \dfrac{x^2 - 10}{x^2 + 3}$

17. $y = \dfrac{x^3}{x^2 - 4}$

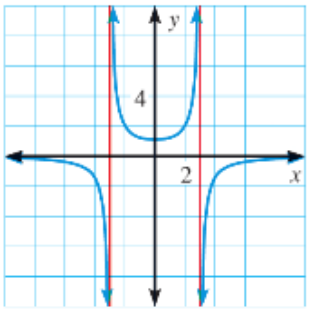
A.



B.



C.



Simplify or perform the indicated operation.

18. $\dfrac{x^2+11x+28}{2x^2+8x}$

19. $\dfrac{x^3-8}{x^2+2x-8} \cdot \dfrac{6x^2-8x}{2x^3+4x^2+8x}$

20. $\dfrac{x}{2(x^3-8)} + \dfrac{x-2}{6x^3+12x^2+24x}$

21. $\dfrac{6}{25x^2} + \dfrac{x}{5x^3+5x}$

22. $\dfrac{3x^2yz}{4yz^2} \cdot \dfrac{5xy^2z}{x^4y}$

23. $\dfrac{16x}{4x-8} \div \dfrac{x^2}{x^2-4} \cdot \dfrac{x+6}{8}$

24. $\frac{4-x^2}{x^2+4x-12}$

25. $\frac{1-x^3}{x^2-1}$

Solve the system.

26. $x^2 + y^2 = 25$
$4x^2 + 25y^2 = 100$

27. $y = x^2 - 9$
$x^2 + y^2 = 9$

Solve.

28. $\frac{6}{x-1} = \frac{9}{x+1}$

29. $\frac{18}{x^2-3x} - \frac{6}{x-3} = \frac{5}{x}$