Garden Grove Unified School District
Algebra 2 Quarter 4 Benchmark Review 2009-10

1. **Std 7.0** What is the simplified form of $\frac{x^2-2x-3}{x^2-3x-4} \bullet \frac{(x-4)^2}{x^2-6x+8}$?

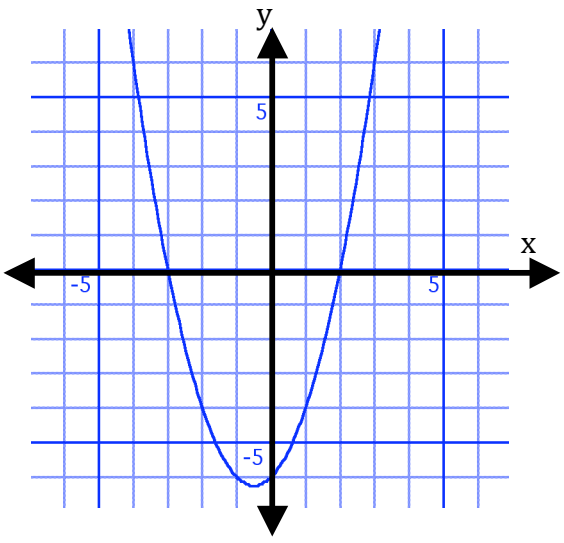
2. **Std 7.0** What is the simplified form of $\frac{x^{-1}+y^{-1}}{x+y}$?

3. **Std 7.0** Simplify $\frac{3x+2}{4x^2-9y^2} - \frac{5}{4x+6y}$

4. **Std7.0** Simplify the expression $\frac{x(x-3)}{(x+2)^{-2}(x^3-4x)}$

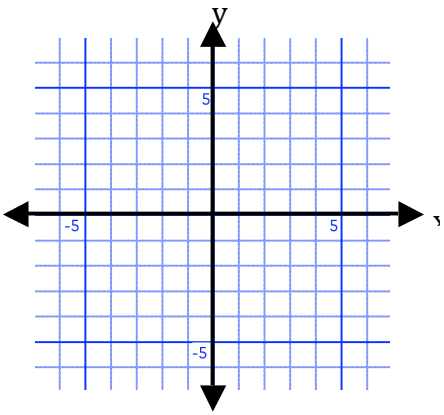
5. **Std 7.0** Simplify: $\frac{x^2+5x+6}{x^2+2x-3} \div \frac{x^2+6x+8}{x^2+x-12}$

6. **Std 8.0** Write an equation for the parabola shown below.



7. **Std 8.0** What is the solution of $y^2-3y+3=0$?

8. **Std 8.0** Graph $y=x^2-6x+5$



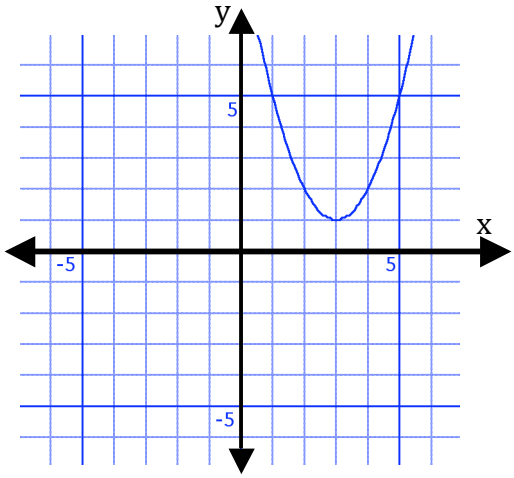
9. **Std 8.0** Three times the square of a number decreased by eight times the number is three. What is the number?

10. **Std 8.0** Find the solution for $2x^2+x-3=0$

11. **Std 10.0** What is the minimum value of the function $f(x)=x^2-6x+9$?

12. **Std 10.0** What are the zeros of $f(x)=x^2-x-6$?

13. **Std 10.0** A certain quadratic function is shown below. Write a statement that describes the real zeros of the function.



Garden Grove Unified School District
Algebra 2 Quarter 4 Benchmark Review 2009-10

14. **Std 10.0** From a platform 100 feet above ground level, a rocket is launched upward with an initial velocity of 96 ft/sec. The function $h(t) = 100 + 96t - 16t^2$ gives the height, h(t), in feet of the rocket t seconds after being launched. What is the maximum height obtained by the rocket?

15. **Std 10.0** A circus clown is shot out of a cannon and lands in a safety net that is 10 feet above the ground. He was 4 feet above the ground when he left the cannon with an upward velocity of 50 feet per second. A) Write a quadratic model to represent this situation. B) how long does it take the clown to reach the net?

16. **Std 14.0** What is the value of $\log 10 + \log_4 16 - 2\log_2 4$?

17. **Std14.0** If log 3 = 0.4771 and log 4 = 0.6021, what is $\log\left(\frac{3}{4}\right)$?

18. **Std 14.0** If log 2 = 0.3010 and log4 = 0.6021, what is log 80?

19. **Std14.0** Solve for x:
$3\log 2 + \frac{1}{3}\log 64 = \log x$

20. **Std 14.0** If log 7 = .8450, what is log 700?

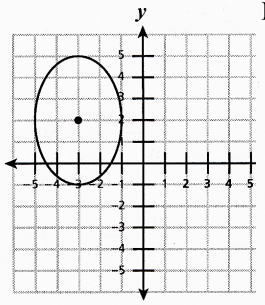
21. **Std 17.0** Identify the conic section that is represented by $ax^2 + by^2 + 2x + 4y - 10 = 0$, if

A. a > 0 and b = 0 B. a = b
C. a > 0 and b < 0 D. a > 0 and b > 0

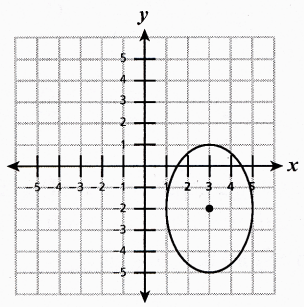
22. **Std 17.0** To solve $x^2 + 8x - 20 = 0$ by completing the square, the equation is written as $x^2 + 8x + n = p$. When p = 36, what is the value of n?

23. **Std17.0** Which graph is represented by $\frac{(x-3)^2}{9} + \frac{(y+2)^2}{4} = 1$?

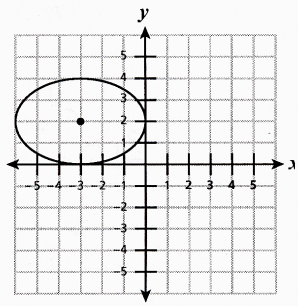
A.



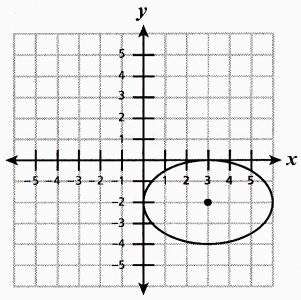
B.



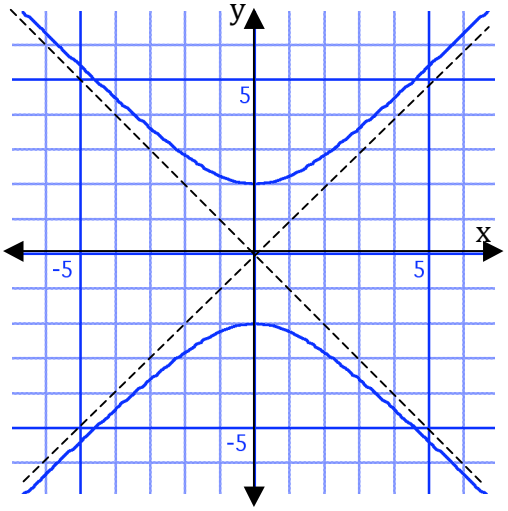
C.



D.



24. **Std 17.0** Write an equation that represents the hyperbola shown below.



25. **Std 17.0** Find the coordinates of the vertex of the conic represented by $2x^2 - 8x + y + 6 = 0$.

26. **Std 22.0** Find the formula that can be used to determine the n^{th} term of the arithmetic sequence 12, 8, 4, 0, -4 …

27. **Std 22.0** What is the value of 8 + 4 + 2 + 1 + … ?

28. **Std 22.0** What is the sum of all the digits from 50 to 100?

29. **Std 22.0** If 1 + 4 + 16 + 64 + … = 341, how many terms are there in the series?

Garden Grove Unified School District
Algebra 2 Quarter 4 Benchmark Review 2009-10

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

2. $\frac{1}{xy}$

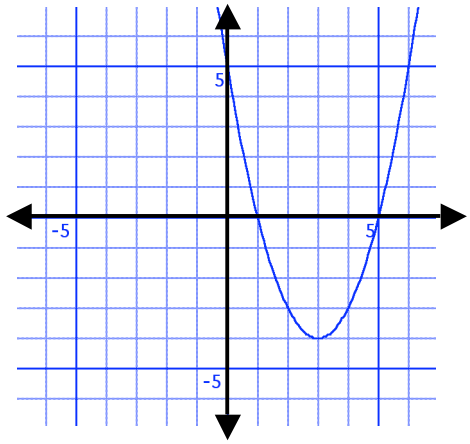
3. $\frac{-4x+15y+4}{8x^2-18y^2}$

4. $\frac{(x-3)(x+2)}{(x-2)}$

5. $\frac{x-3}{x-1}$

6. $y = x^2 + x - 6$

7. $\left(\frac{3+i\sqrt{3}}{2}\right) and \left(\frac{3-i\sqrt{3}}{2}\right)$

8. 

9. 3 or $-\frac{1}{3}$

10. $-\frac{3}{2}$, 1

11. 0

12. -2 and 3

13. There are no real zeros

14. 244 ft

15. a) $10 = -16t^2 + 50t + 4$ b) 3 sec

16. –1

17. -0.1250

18. log 80 = log 8 + log 10 = 1.9031

19. 32

20. 2.8450

21. A. parabola B. circle C. hyperbola D. ellipse

22. 16

23. D

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

25. (2, 2)

26. $a_n = 16 - 4n$

27. 16

28. 3,825

29. 5