

Name: _____

This assignment is for students who have completed Algebra II or II honors and are taking Advanced Math (Not Adv Math DE) in the 2018-2019 school year.

Did you read the instructions?

What math are you taking in the 2018-2019 school year?

1. Solve: $|2w-1|+6=12$

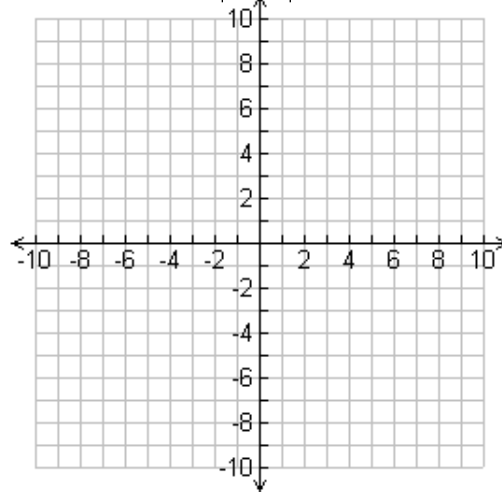
2. Factor completely: $10x^2+11x-6$

3. Factor completely: $3x^4y+24xy$

4. Solve: $x^2+2x+10=0$

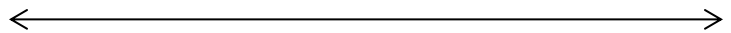
5. Solve: $4x^2-28x=32$

6. Graph: $y=-3|x-2|$



7. Write the quadratic function in vertex form: $y+3=2(x-1)(x-1)$

8. Solve and graph: $7x+1<10x-5$ and $10x-6\leq 8x+12$



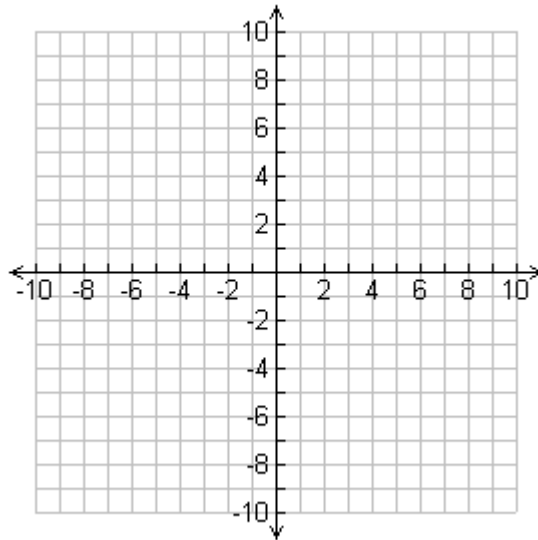
9. Solve: $25^{x+4}=125^{2x}$

10. What are the x-intercepts of $y=3x^2-11x-4$

11. What is the axis of symmetry of $y = -3x^2 - 11x - 4$

Graph each of the following and give the indicated information.

12. $y = x^2 + 3$



Vertex: _____

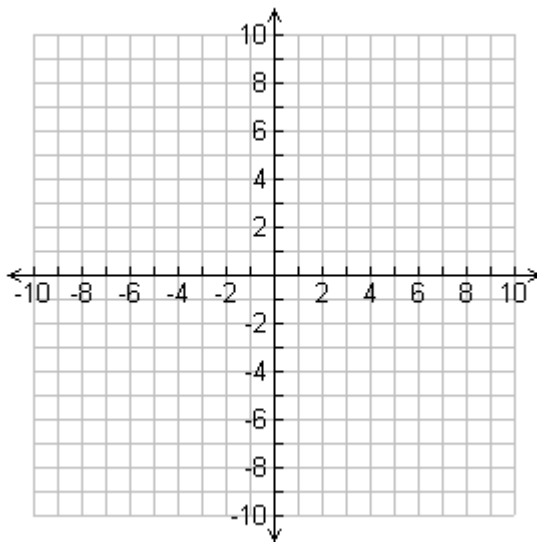
Domain: _____

Range: _____

Axis of Symmetry: _____

y-intercept: _____

13. $y = \frac{3}{2}|x - 3| + 4$



Vertex: _____

Domain: _____

Range: _____

Axis of Symmetry: _____

y-intercept: _____

14. Give the number and type of solutions: $-7x^2 + 6x - 1 = 0$

Solve using system of equations:

15. A school is selling tickets to the annual talent show. On the first day of ticket sales the school sold 1 senior citizen ticket and 2 student tickets for a total of \$20. The school took in \$119 on the second day by selling 7 senior citizen tickets and 11 student tickets. What is the price each of one senior citizen ticket and one student ticket?

16. A bacteria culture doubles every hour.
a) If you started out with a sample of 500 bacteria, how many bacteria would be present in 7 hours?

17. Rewrite the following as an exponential expression: $\log_4(2x) = 3$

18. Solve: $\log_6(2x + 2) = 3$

19. Solve: $25^{2x} = (5)^{x+12}$

20. You invest \$14,500 in an account that pays interest at 3.5% compounded quarterly.

a) What would the account be worth in 5 years?

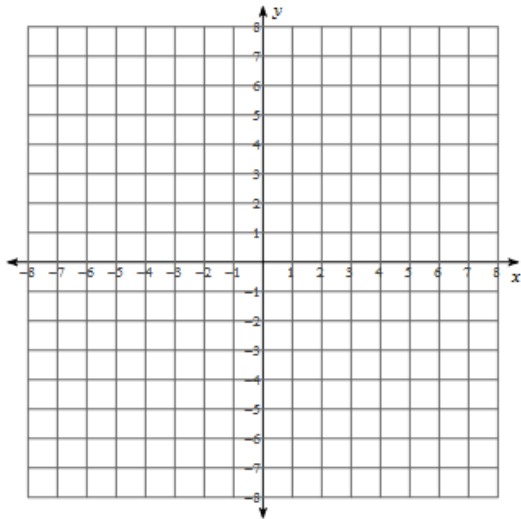
20a. _____

b) If you were offered 3.25% compounded continuously, would you take the offer? Explain and show work.

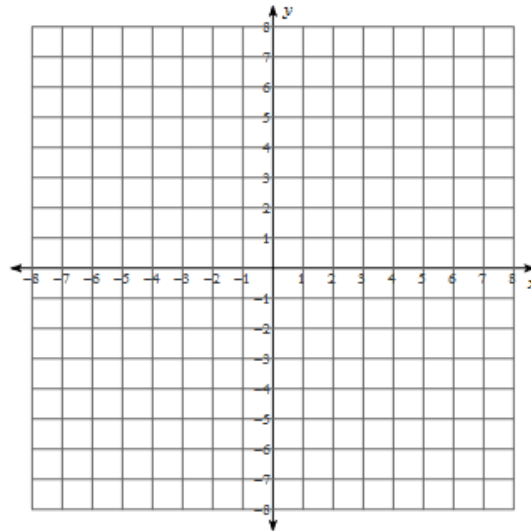
20b. _____

Graph the following functions on the coordinate planes provided. Label VIP and asymptote.

21. $y = 2 \cdot \frac{2}{3}^{(x-1)} - 3$



22. $y = 3^{x-1} + 4$



Simplify:

23. $\frac{3x^{-7}y^4}{6x^{11}y^{-5}}$

24. $\frac{2x^{\frac{1}{2}}y^{\frac{2}{3}}}{8x^{\frac{2}{3}}y^{-\frac{7}{4}}}$

25. Expand: $\log_{17}\left(\frac{x^3y^7}{a}\right)$

26. Simplify: $\frac{3x^3y\sqrt{24x^5}}{2\sqrt{18x^3}}$

27. Solve $-3(2x-5)^{\frac{3}{2}} + 4 = -188$

28. Solve $\log_7(3x+4) - \log_7(2x+1) = 2$