Name: _____

5.2.D1 – EXPONENTIAL FUNCTIONS

Past due on: _____ Period: _____

Write a function that represents each population as a function of time **and** determine the population after 10 years. *Refer to the 5.2 example "Writing & Solving Equations for Population Problems" in the Chapter 5 Summary.*

1. Blueville has a population of 7000. Its population is decreasing at a rate of 1.4%.

2. Youngstown has a population of 12,000. Its population is increasing at a rate of 1.2%.

3. Greenlee has a population of 8000. Its population is decreasing at a rate of 1.75%.

4. North Park has a population of 14,000. Its population is decreasing at a rate of 3.1%.

5. Springfield has a population of 11,500. Its population is increasing at a rate of 1.25%.

Use the simple and compound interest formula to complete each table. Round to the nearest cent. *Refer to the 5.1 example "Comparing Simple & Compound Interest" in the Chapter 5 Summary.*

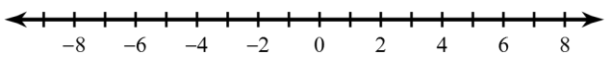
6. Pedro has $1100 to deposit into an account. The interest rate available for the account is 3.5%.

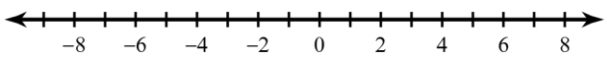
TIME (YEARS)	SIMPLE INTEREST BALANCE	COMPOUND INTEREST BALANCE
EXPRESSION: t	EXPRESSION:	EXPRESSION:
1		
5		
10		

Solve each compound inequality and graph its solution set. *Refer to the 2.4 example "Solving Compound Inequalities" in the Chapter 2 Summary.*

7. $-5 + 3x \leq -14$ or $5x + 1 > 1$

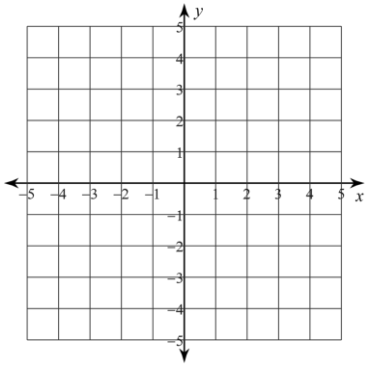
8. $-52 \leq -7x + 4 < 11$



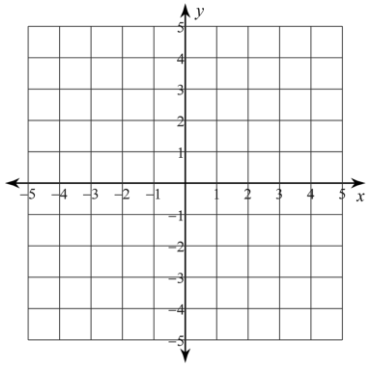


Solve the system of linear equations graphically. Write your solution as an ordered pair (x, y). *Refer to the 6.1 example "Predicting the Solution of a System Using Graphing" in the Chapter 6 Summary.*

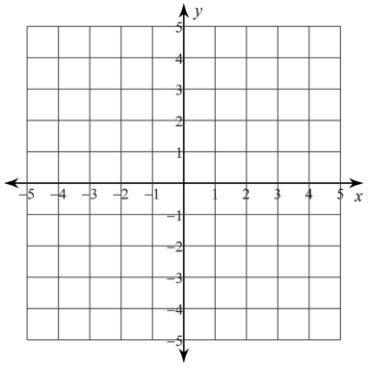
9. $y = x + 4$
   $y = -\frac{2}{3}x - 1$



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

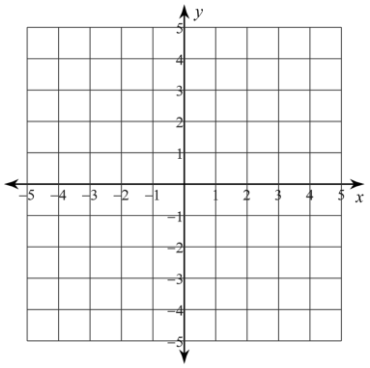


11. $8x + y = -4$
    $x + y = 3$

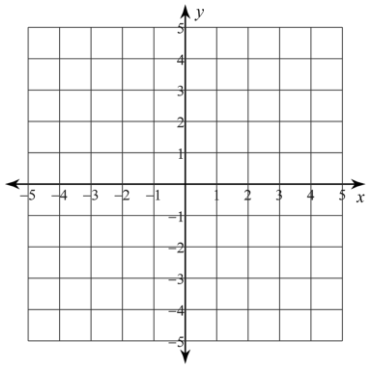


Graph each system of linear inequalities. *Refer to the 7.2 example "Graphing a System of Linear Inequalities" in the Chapter 7 Summary.*

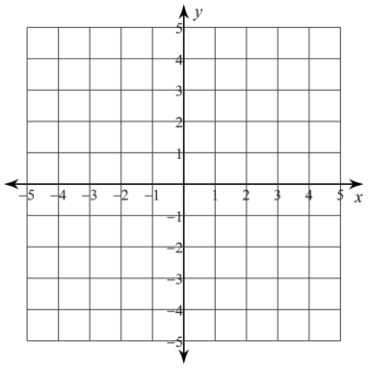
12. $y < 4x + 3$
    $y \leq -2x - 3$



13. $2y < 1x + 4$
    $y \geq 2x - 1$



14. $5x + y > -3$
    $x + y > 1$



Determine whether the sequence is arithmetic or geometric. Write its explicit formula and use it to determine the 10th term. Write its recursive formula and use it to find the next 3 terms. Lastly, identify the sequence as a linear or exponential function. *Refer to all Chapter 4 examples" in the Chapter 4 Summary.*

	15) $16, 30, 44, \ldots$	16) $2, -6, 18, \ldots$	17) $-1280, 320, -80, \ldots$
SEQUENCE TYPE			
EXPLICIT FORMULA			
10^{TH} TERM			
RECURSIVE FORMULA			
NEXT 3 TERMS			
LINEAR OR EXPONENTIAL			