

Name \_\_\_\_\_ Block \_\_\_\_\_ Date \_\_\_\_\_

**Review: Unit 1 → Lessons 2 – 5**

1. You have no more than \$60 to spend. You want a drink that costs \$1.50 including tax, and you want to buy a pair of pants, which will have 4% sales tax. What is the inequality that represents the amount of money you have to spend?
  
  
  
  
  
  
  
  
  
  
2. A store has a display with pencils that are for sale. The owner typically sells 6 pencils a day. The display holds 50 pencils. The owner insists that there be no fewer than 32 pencils in the display. When should the owner restock the display?
  
  
  
  
  
  
  
  
  
  
3. A type of bacteria doubles every 7 hours. If you started with 16 bacteria in a Petri dish, how many bacteria would you have after 56 hours?
  
  
  
  
  
  
  
  
  
  
4. A town is declining in population at a rate of 3% per year. If the current population is 8,000 people, what will be the population in 7 years?

5. Your cell phone plan allows you 600 minutes to talk per month. So far this month, you have used 290 minutes and you have 8 days left on this plan. Which inequality below could you use to determine how many minutes **at most** you can use per day so that you don't go over your monthly plan minutes?

a.  $8x + 290 < 600$

c.  $8x + 290 > 600$

b.  $8x + 290 \leq 600$

d.  $8x + 290 \geq 600$

6. It costs \$90 to buy an air conditioner and \$0.50 per minute to run it. Write a linear equation to model the total cost of using an air conditioner?  $y = mx + b$

7. A city's population increases at a rate of 3.5% every year. The current population is 8,500 people. Write an equation that models this scenario.  $y = a(1 + r)^x$

8. An investment of \$900 earns 4.4% interest **compounded quarterly**. Write an equation to model this scenario, and then solve the equation.

9. Given the equation  $y = 5x - 7$ , which point is a solution?

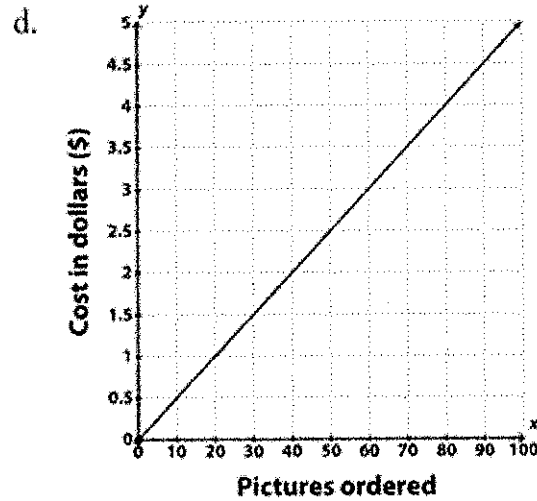
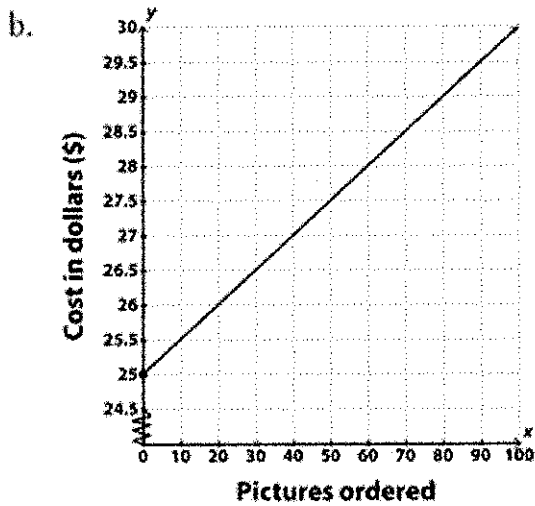
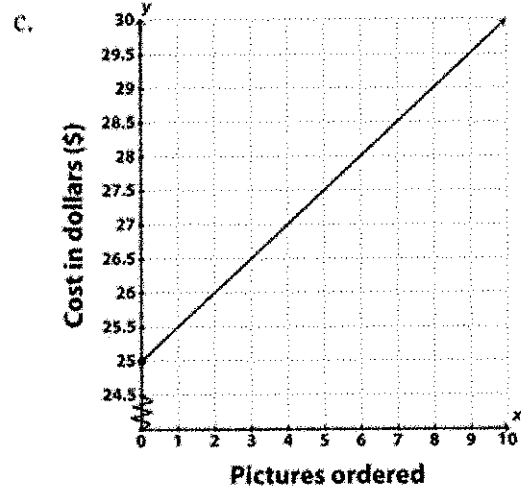
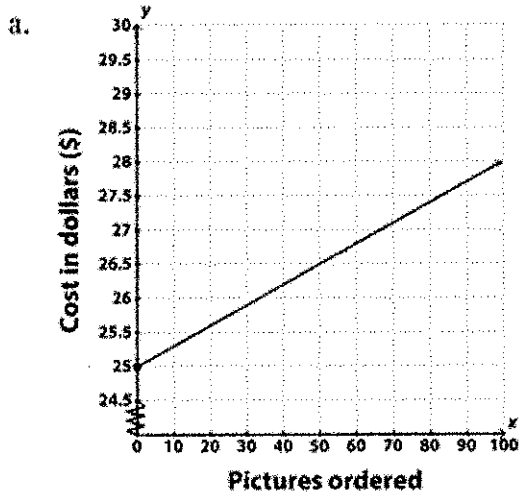
a. (1, 2)

b. (0, 7)

c. (-1, 2)

d. (-2, -17)

10. A photo service charges \$25.00 a year as well as \$0.05 for each photo ordered. Which graph models the total cost of ordering photos?



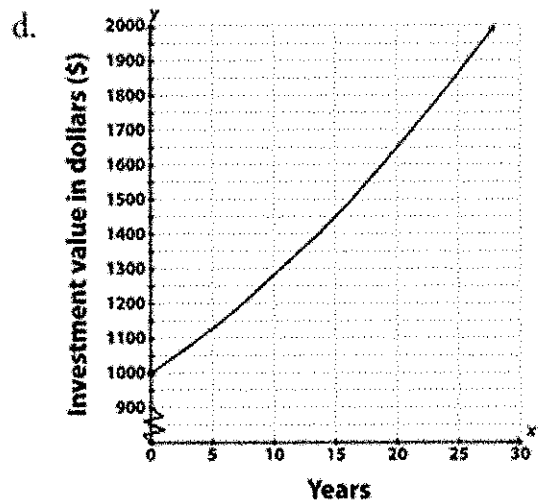
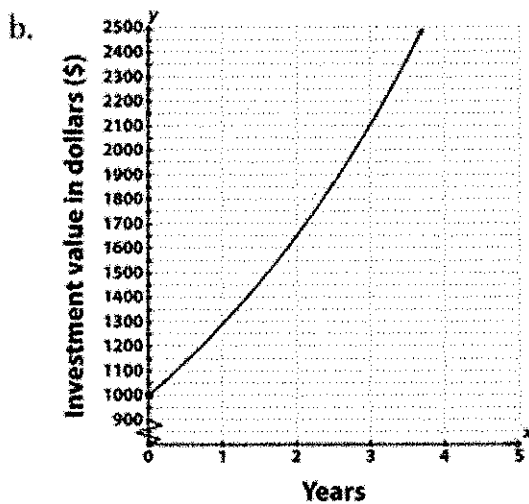
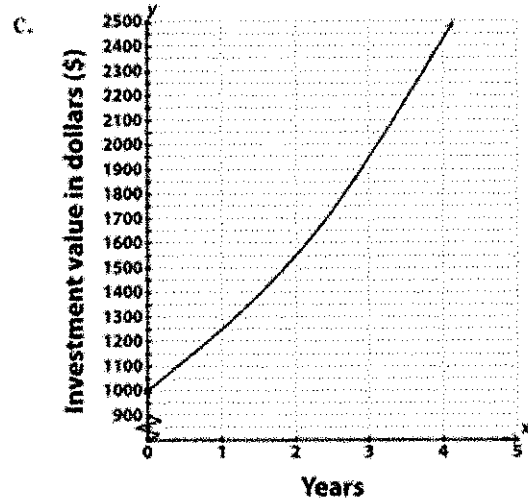
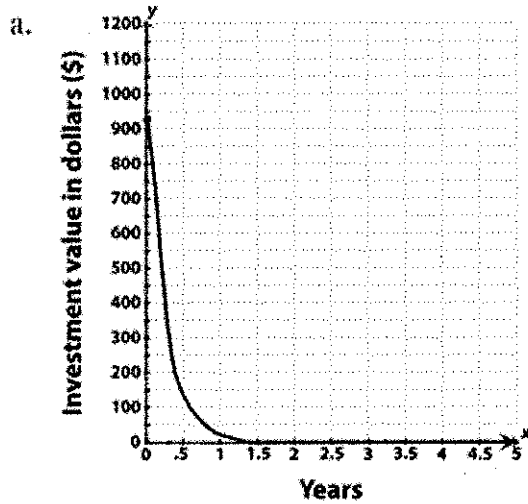
11. Given the inequality  $y \leq -3x + 6$ , which point is **NOT** a solution?

- a. (1, -3)      b. (0, -2)      c. (-1, -9)      d. (2, 3)

12. Solve the equation  $8x + 4y = 12$  for  $y$ .

13. Solve the formula  $r^3 = \frac{3V}{4\pi}$  for  $V$ .

14. An investment of \$1,000 is compounded monthly at a rate of 2.5%. Which graph models the change of the investment over time?



15. Your cell phone company charges \$29.99 a month plus \$0.25 for each text message sent. You have budgeted no more than \$35.00 for cell phone service each month. Given this situation, determine the minimum and maximum number of texts you can send without going over budget. Let  $x$  represent the number of texts.

a.  $x < 20.04$

c.  $x > 0$  and  $x < 20$

b.  $x \geq 0$  and  $x \leq 20.04$

d.  $x \geq 0$  and  $x \leq 20$