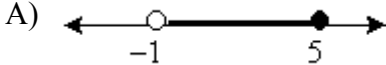

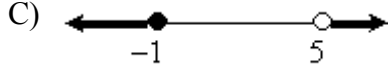
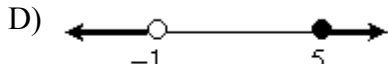


Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. A community college has 3,000 students and 90 instructors. The college plans that enrollment will be 3,500 next year. How many new instructors should be hired if the college wants to keep the same student to instructor ratio?  
A) 77 instructors B) 13 instructors C) 105 instructors D) 15 instructors
2. Joe has \$10,000 to purchase a used car. If the sales tax is 7% and the fee for title and license plates is \$200, what is the maximum amount Joe can spend for a car?  
A) \$9,532.71 B) \$5,764.70 C) \$9,158.87 D) \$9,345.79
3. Dorothy is 6 years older than Ricardo. The product of their present ages is twice what the product of their ages was 6 years ago. How old is Dorothy?  
A) 18 B) 30 C) 12 D) 24
4. Simplify the expression.  $-3r^2 + 2r + 7 - 9 + 4r + r^2$   
A)  $2r^2 + 6r - 2$  B)  $-2r^2 + 6r - 2$  C)  $2r^2 + 6r + 2$  D)  $-2r^2 + 6r + 2$
5. An arithmetic student needs at least a 70% average to receive credit for the course. If she scored 76%, 75%, and 62% on the first three exams, what is the lowest score she can get on the fourth exam to receive credit for the course?  
A) 69% B) 72% C) 67% D) 65%
6. Solve the inequality:  $x + 10 < 5$   
A)  $x < -5$  B)  $x > -5$  C)  $x < 15$  D)  $x > 15$
7. Solve.  $-6x - 6 - 10x = -16x + 4$   
A)  $\emptyset$  B)  $\{x \mid x \text{ is a real number}\}$

8. Use the FOIL method to multiply.  $(3x - 1)(2x + 5)$
- A)  $6x^2 - 17x - 5$    B)  $6x^2 + 17x - 5$    C)  $6x^2 - 13x - 5$    D)  $6x^2 + 13x - 5$
9. Simplify:  $-2(3b + 1) + 10b - 4$
- A)  $4b - 2$    B)  $16b - 2$    C)  $4b - 3$    D)  $4b - 6$
10. Solve the equation.  $4x + 20 = -4$
- A)  $\{19\}$    B)  $\{4\}$    C)  $\{-21\}$    D)  $\{-6\}$
11. A person drives 5,000 miles in 6 months. How many miles will that person drive in 3 years?
- A) 90,000 miles   B) 2,500 miles   C) 30,000 miles   D) 10,000 miles
12. Show the solutions using a graph:  $-1 < x \leq 5$
- A) 
- B) 
- C) 
- D) 
13. At a certain restaurant, one out of every 5 customers orders a hamburger. If the restaurant has 100 customers in one day, how many hamburgers will they sell?
- A) 20 hamburgers   B) 21 hamburgers   C) 22 hamburgers   D) 19 hamburgers
14. Solve the inequality and graph the solution set.  $4(x + 2) - 5 > 3x + 8$
- A)  $x > -5$    B)  $x > 11$    C)  $x > 20$    D)  $x > 5$
15. Evaluate  $5m^2 - 3m + 1$  when  $m = -2$ .
- A) 15   B) -25   C) 27   D) -13

16. Solve the proportion.  $\frac{3}{x-1} = \frac{7}{x+2}$
- A)  $\frac{13}{4}$    B)  $\frac{1}{4}$    C)  $\frac{4}{1}$    D)  $\frac{3}{4}$
17. Solve by factoring.  $x^2 + 5x - 6 = 0$
- A)  $\{-6, 1\}$    B)  $\{6, 1\}$    C)  $\{6, -1\}$    D)  $\{-6, -1\}$
18. Write the ratio as a fraction and reduce to lowest terms. 45:25
- A)  $\frac{5}{9}$    B)  $\frac{25}{45}$    C)  $\frac{9}{5}$    D)  $\frac{45}{25}$
19. Write the phrase in symbols: Eight less than three times a number.
- A)  $3(x - 8)$    B)  $3x - 8$    C)  $8 - 3x$    D)  $3(8 - x)$
20. Solve by using the quadratic formula.  $3x^2 - 11x - 4$
- A)  $\left\{\frac{1}{3}, -4\right\}$    B)  $\left\{\frac{1}{4}, -4\right\}$    C)  $\left\{-\frac{1}{3}, 4\right\}$    D)  $\left\{-\frac{1}{4}, 3\right\}$
21. Solve.  $4 + 3(2x + 1) = x - 8$
- A)  $\left\{-\frac{1}{5}\right\}$    B)  $\left\{-\frac{3}{5}\right\}$    C)  $\left\{-\frac{13}{5}\right\}$    D)  $\{-3\}$
22. Simplify:  $-8(-10x - 2)$
- A)  $-80x + 16$    B)  $80x + 16$    C)  $80x - 2$    D)  $96x$

23. Solve:  $-\frac{2}{5}x = 18$

- A)  $\left\{\frac{36}{5}\right\}$  B)  $\{45\}$  C)  $\left\{-\frac{36}{5}\right\}$  D)  $\{-45\}$

24. Write the ratio as a fraction and reduce to lowest terms. 4 feet to 20 inches

- A)  $\frac{12}{5}$  B)  $\frac{1}{5}$  C)  $\frac{5}{12}$  D)  $\frac{5}{1}$

25. The cost, including sales tax, of a shirt is \$16.05. If the sales tax is 7%, find the price of the shirt before the tax was added.

- A) \$17 B) \$16 C) \$14 D) \$15

**Answer Key**

1. D
2. C
3. D
4. B
5. C
6. A
7. A
8. D
9. D
10. D
11. C
12. A
13. A
14. D
15. C
16. A
17. A
18. C
19. B
20. C
21. D
22. B
23. D
24. A
25. D