

## Kyote Practice Problems 2

1. Assuming that a car gets 25 miles per gallon of gas, how many gallons of gas are required for the car to go 155 miles?

- A) 6.20    B) 5.95    C) 5.70    D) 6.45    E) 5.45

2. A married couple and their 4 children buy tickets to a ball game. The tickets cost 25 dollars apiece, but each of their children gets a 20 percent discount. How much, in dollars, must the family pay for tickets?

- A) 150.00    B) 125.00    C) 130.00    D) 120.00    E) 145.00

3. Simplify.  $(3 - 5)^2$

- A) 4    B) 19    C) -16    D) 34    E) -4

4. Which of the following sets is the solution set of the inequality  $18x + 7 > 3x - 3$ ?

- A)  $(-\frac{10}{21}, \infty)$     B)  $(-\frac{2}{3}, \infty)$     C)  $(-\infty, \frac{4}{15})$     D)  $(-\infty, -\frac{2}{3})$     E)  $(\frac{4}{15}, \infty)$

5. Simplify.  $5(1 - 2x) - 4(4 - x)$

- A)  $-11 - 14x$     B)  $21 - 14x$     C)  $-11 - 6x$

- D)  $-11 - x$     E)  $21 - 3x$

6. One solution of  $x^2 - 15x + 54 = 0$  is

- A) -9    B) -6    C) -15    D) 6    E) 15

7. The graphs of the lines  $y = 4$  and  $9x - 2y = 55$  intersect in a point. What the  $x$ -coordinate of that point?

- A) 4     B) 7     C) 9     D)  $-7$      E)  $-4$

8. A rectangular field is enclosed by 600 feet of fencing. What is the length, in feet, of the field if its length is 10 feet more than its width?

- A) 150     B) 155     C) 145     D) 295     E) 305

9. Simplify.  $\frac{6x^8 - 2x^2}{2x^2}$

- A)  $3x^6 - 1$      B)  $6x^8 - 1$      C)  $3x^6 - 2x^2$      D)  $6x^8$      E)  $3x^4 - 1$

10. What is the area of a square, in square feet, whose perimeter is 40 feet?

- A) 100     B) 10     C) 200     D) 400     E) 1600

11. Simplify.  $(\frac{6}{7-3})^2$

- A)  $\frac{18}{29}$      B) 9     C)  $\frac{9}{4}$      D)  $\frac{-9}{4}$      E)  $\frac{9}{10}$

12. Find the value of  $\frac{x-y}{x}$  when  $x = -6$  and  $y = -3$ .

- A)  $\frac{3}{2}$      B)  $-3$      C)  $\frac{-1}{2}$      D)  $\frac{1}{2}$      E) 3

13. What is the area of the triangle whose vertices are  $(-4, 0)$ ,  $(-10, 0)$  and  $(-7, -6)$ ?

- A) 21     B) 60     C) 27     D) 30     E) 18

14. Solve  $56 - 7x = 2$  for  $x$ .

- A) 58     B)  $\frac{54}{7}$      C)  $\frac{58}{7}$      D) 54     E)  $-47$

15. Simplify.  $(9x^6)^{-2}$

- A)  $\frac{9}{x^{12}}$      B)  $-18x^6$      C)  $\frac{1}{81x^{12}}$      D)  $9x^4$      E)  $-81x^4$

16. Multiply.  $(x^2 - y^2)(x^7 + y^7)$

- A)  $x^9 - y^9$      B)  $x^{14} - y^{14}$      C)  $x^9 + x^2y^7 - x^7y^2 - y^9$   
 D)  $x^9 + x^7y^2 - x^2y^7 - y^9$      E)  $x^{14} + x^2y^7 - x^7y^2 - y^{14}$

17. Multiply and simplify.  $\frac{x^8}{x^2 - 36} \cdot \frac{x - 6}{x^2}$

- A)  $\frac{x^6}{x + 6}$      B)  $\frac{x^{10}}{(x - 6)(x^2 - 36)}$      C)  $\frac{x^4}{x - 6}$      D)  $\frac{x^4}{x + 6}$      E)  $\frac{x^6}{x - 6}$

18. Which of the following is an equation of the line parallel to  $y = 5x + 8$  that passes through the point  $(4, -3)$ ?

- A)  $y = \frac{1}{5}x + \frac{-19}{5}$      B)  $y = 5x - 23$      C)  $y = \frac{-1}{5}x + \frac{-11}{5}$   
 D)  $y = 5x + 19$      E)  $y = 5x + 17$

19. Solve  $\frac{1}{3}x - \frac{2}{3} = 4$  for  $x$ .

- A) 6     B)  $\frac{13}{3}$      C)  $\frac{1}{14}$      D) 10     E) 14

20. Subtract.  $\frac{3}{2} - \frac{2}{9}$

- A)  $\frac{1}{18}$      B)  $\frac{23}{18}$      C)  $\frac{-2}{3}$      D)  $\frac{-1}{7}$      E)  $\frac{-23}{7}$

21. Simplify.  $\frac{(-6x^7)^2}{x^7}$

- A)  $-6x^2$      B)  $36x^7$      C)  $6x^7$      D)  $6x^2$      E)  $-36$

22. The graph of the line with equation  $y = 3x + 8$  crosses the  $x$ -axis when  $x = ?$

- A)  $\frac{-8}{3}$      B)  $\frac{-3}{8}$      C)  $\frac{8}{3}$      D) 8     E) 0

23. Which decimal number is smallest (left of the others on the number line)?

- A)  $-0.158$      B)  $-0.518$      C)  $-0.815$      D)  $-0.581$      E)  $-0.851$

24. Subtract  $9x^2 + 9x - 7$  from  $2x - 3$ .

- A)  $-9x^2 + 11x - 10$      B)  $-9x^2 - 7x - 10$      C)  $-9x^2 - 7x + 4$

- D)  $9x^2 + 7x - 10$      E)  $9x^2 + 7x - 4$

25. If  $\frac{5F+8}{G} = \frac{3R-1}{S}$  is solved for  $F$ , then  $F =$

A)  $\frac{3RG-G-8S}{5S}$      B)  $\frac{3RG-9}{5S}$      C)  $\frac{3RG-G+7}{5S}$

D)  $\frac{3RG-G+8S}{5S}$      E)  $\frac{3RG-1-8S}{5S}$

26. Multiply.  $5x(x-2)^2$

A)  $5x^3 + 20x$      B)  $5x^3 - 20x^2 + 20x$      C)  $5x^3 - 20x$

D)  $5x^3 - 10x^2 + 20x$      E)  $5x^3 - 20x^2 - 20x$

27. One factor of  $3x^2 - 14x + 8$  is

A)  $3x + 2$      B)  $x + 4$      C)  $x - 2$      D)  $3x - 4$      E)  $3x - 2$

28. Find the value of  $x^3 + x^2 - 3x$  when  $x = -2$ .

A) 2     B) 18     C) -18     D) -6     E) 10

29. A boy has only dimes and quarters in his piggy bank. If he has 70 coins worth 12 dollars and 40 cents altogether, how many quarters does he have in his bank?

A) 39     B) 36     C) 35     D) 37     E) 38

30. Add the mixed numbers.  $6\frac{5}{7} + 9\frac{1}{2}$ .

A)  $16\frac{3}{14}$      B)  $15\frac{2}{3}$      C)  $15\frac{3}{7}$      D)  $16\frac{17}{14}$      E)  $16\frac{2}{3}$

## Key: Kyote Practice 2

1) ◇ A	2) ◇ C	3) ◇ A	4) ◇ B	5) ◇ C	6) ◇ D
7) ◇ B	8) ◇ B	9) ◇ A	10) ◇ A	11) ◇ C	12) ◇ D
13) ◇ E	14) ◇ B	15) ◇ C	16) ◇ C	17) ◇ A	18) ◇ B
19) ◇ E	20) ◇ B	21) ◇ B	22) ◇ A	23) ◇ E	24) ◇ C
25) ◇ A	26) ◇ B	27) ◇ E	28) ◇ A	29) ◇ B	30) ◇ A

## Standards Table

Standard	Problems	Max	Score
01:Evaluate numerical expressions.	3,11	2	
02:Evaluate algebraic expressions.	12,28	2	
03:Perform arithmetic calculations.	20,30	2	
04:Order fractions and decimals on a number line.	23	1	
05:Solve applied arithmetic problems.	1,2	2	
06:Solve simple geometry problems.	10	1	
07:Solve simple coordinate geometry problems.	13	1	
08:Add and subtract polynomials.	5,24	2	
09:Multiply polynomials.	16,26	2	
10:Simplify algebraic expressions.	15,21	2	
11:Factor a polynomial.	27	1	
12:Add, subtract and multiply simple rational expressions.	17	1	
13:Simplify a rational expression.	9	1	
14:Solve a linear equation.	14,19	2	
15:Solve a multivariable equation for one of its variables.	25	1	
16:Use a linear equation to solve a simple word problem.	8,29	2	
17:Solve a linear inequality.	4	1	
18:Find the slope and an equation of a line.	18	1	
19:Graph a line.	22	1	
20:Solve a quadratic equation.	6	1	
21:Solve a system of two linear equations in two variables.	7	1	