Kyote Practice Problems 4

1. Multiply. $(5\,x - 3\,y)^2$

☐ A) $5\,x^2 - 3\,y^2$ ☐ B) $25\,x^2 + 9\,y^2$ ☐ C) $25\,x^2 - 9\,y^2$

☐ D) $25\,x^2 - 15\,x\,y + 9\,y^2$ ☐ E) $25\,x^2 - 30\,x\,y + 9\,y^2$

2. Simplify, assuming x is a positive number. $\sqrt{x^{18} + x^{10}}$

☐ A) $x^{12} + x^8$ ☐ B) $x^8\sqrt{x^8 + 1}$ ☐ C) $x^{16} + x^8$

☐ D) $x^9 + x^5$ ☐ E) $x^5\sqrt{x^8 + 1}$

3. Multiply. $(x^2 - y^2)(x^6 + y^6)$

☐ A) $x^{12} - y^{12}$ ☐ B) $x^8 - y^8$ ☐ C) $x^8 + x^6\,y^2 - x^2\,y^6 - y^8$

☐ D) $x^{12} + x^2\,y^6 - x^6\,y^2 - y^{12}$ ☐ E) $x^8 + x^2\,y^6 - x^6\,y^2 - y^8$

4. Add. $\frac{3}{x} + \frac{5\,x + 3}{x\,(x + 1)}$

☐ A) $\frac{8\,x + 3}{x\,(x + 1)}$ ☐ B) $\frac{8\,x + 3}{x^2\,(x + 1)}$ ☐ C) $\frac{5\,x + 6}{x\,(x + 1)}$ ☐ D) $\frac{8\,x + 6}{x\,(x + 1)}$ ☐ E) $\frac{8\,x + 6}{x^2\,(x + 1)}$

5. Solve $54 - 9\,x = 2$ for x.

☐ A) 56 ☐ B) 52 ☐ C) -43 ☐ D) $\frac{52}{9}$ ☐ E) $\frac{56}{9}$

6. The solutions of $2\,x^2 + 9\,x - 5 = 0$ are

☐ A) $\frac{-1}{2}$ and -5 ☐ B) $\frac{1}{2}$ and 5 ☐ C) $\frac{-1}{2}$ and 5 ☐ D) $\frac{1}{2}$ and -5 ☐ E) -5 only

7. Simplify. $\frac{42}{6-42}$

☐ A) $\frac{-7}{6}$ ☐ B) $\frac{7}{6}$ ☐ C) 6 ☐ D) 8 ☐ E) $\frac{1}{6}$

8. Simplify. $8-2(3^3)$

☐ A) 8 ☐ B) -208 ☐ C) 162 ☐ D) -10 ☐ E) -46

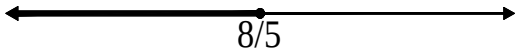
9. Combine like terms and simplify. $(6\,x^2-6\,x+4)-(x^2-5\,x-9)$

☐ A) $5\,x^2-x+13$ ☐ B) $5\,x^2-11\,x+13$ ☐ C) $5\,x^2-x-5$

☐ D) $6\,x^2-x+13$ ☐ E) $6\,x^2-11\,x-5$

10. Which of the following inequalities has the solution set corresponding to bold portion of the number line below?

☐ A) $5\,x \geq 8$ ☐ B) $-5\,x \leq 8$ ☐ C) $5\,x \leq -8$ ☐ D) $-5\,x \geq -8$ ☐ E) $-5\,x \leq -8$



11. If $L=\frac{4}{9}\,F+8$ is solved for F, then $F=$?

☐ A) $\frac{4}{9}\,L+8$ ☐ B) $\frac{9}{4}\,L-8$ ☐ C) $\frac{4}{9}\,L+\frac{-32}{9}$ ☐ D) $\frac{9}{4}\,L-18$ ☐ E) $\frac{9}{4}\,L+18$

12. An eastbound car is going 4 miles per hour faster than a westbound car. The cars are 216 miles apart 2 hours after passing each other on a highway. What is the speed, in miles per hour, of the eastbound car?

☐ A) 55 ☐ B) 54 ☐ C) 52 ☐ D) 56 ☐ E) 53

13. What is the price, in dollars, of an Iphone that has been marked down 19 percent from its original price of 440 dollars?

☐ A) 347.60 ☐ B) 343.20 ☐ C) 352.00 ☐ D) 360.80 ☐ E) 356.40

14. The graphs of the lines $y = 8$ and $2\,x - 2\,y = 2$ intersect in a point. What the x-coordinate of that point?

☐ A) 8 ☐ B) -8 ☐ C) 9 ☐ D) -9 ☐ E) 2

15. Find the value of $(x - y)^2$ when $x = 9$ and $y = -8$.

☐ A) 1 ☐ B) 145 ☐ C) 289 ☐ D) 34 ☐ E) 17

16. The point $(2, 1)$ is on a line with slope 4. Which of the following is another point on that line?

☐ A) $(4, 5)$ ☐ B) $(3, 3)$ ☐ C) $(3, 5)$ ☐ D) $(4, 7)$ ☐ E) $(5, 11)$

17. A rectangle has length 32 inches and its perimeter is 6 times its width. What is its width in inches?

☐ A) 96 ☐ B) 32 ☐ C) 8 ☐ D) 16 ☐ E) 24

18. 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

19. If a man walks at the rate of 2 feet per second, how many minutes will it take him to walk 720 feet?

☐ A) 3 ☐ B) 360 ☐ C) 6 ☐ D) 180 ☐ E) 12

20. One factor of $x^2 - 9\,x + 18$ is

☐ A) $x - 9$ ☐ B) $x - 6$ ☐ C) $x + 2$ ☐ D) $x - 2$ ☐ E) $x + 3$

21. Which fraction is the largest?

☐ A) $\frac{1}{2}$ ☐ B) $\frac{13}{30}$ ☐ C) $\frac{8}{15}$ ☐ D) $\frac{7}{15}$ ☐ E) $\frac{17}{30}$

22. Simplify. $\frac{x^2 - 1}{x^2 - 2\,x - 3}$

☐ A) $\frac{x+1}{x+3}$ ☐ B) $\frac{x-1}{x+3}$ ☐ C) $\frac{x+1}{x-3}$ ☐ D) $\frac{x-1}{x-3}$ ☐ E) $\frac{1}{2\,x+3}$

23. What is the distance between the points $(3, 4)$ and $(3, -7)$?

☐ A) 4 ☐ B) -3 ☐ C) 11 ☐ D) 14 ☐ E) 7

24. Add. $\frac{1}{4} + \frac{1}{5}$

☐ A) $\frac{1}{20}$ ☐ B) $\frac{2}{9}$ ☐ C) $\frac{9}{20}$ ☐ D) $\frac{1}{9}$ ☐ E) $\frac{1}{10}$

25. Simplify. $5(1-6\,x)-4(1-x)$

☐ A) $9-34\,x$ ☐ B) $1-34\,x$ ☐ C) $9-7\,x$

☐ D) $1-26\,x$ ☐ E) $1-5\,x$

26. Solve $-0.01\,x+630.0=600$ for x.

☐ A) -123000 ☐ B) -3000 ☐ C) 123000 ☐ D) 3000 ☐ E) 300

27. The number 20 is 2 percent of what number?

☐ A) 10 ☐ B) 1000 ☐ C) 40 ☐ D) $\frac{2}{5}$ ☐ E) 100

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

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

29. Simplify. $\dfrac{(-8\,x^3)^2}{x^3}$

☐ A) $64\,x^3$ ☐ B) $-8\,x^2$ ☐ C) -64 ☐ D) $8\,x^3$ ☐ E) $8\,x^2$

30. What is the area of a square, in square feet, whose perimeter is 20 feet?

☐ A) 5 ☐ B) 400 ☐ C) 50 ☐ D) 100 ☐ E) 25

Key: Kyote Practice 4

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

Standards Table

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