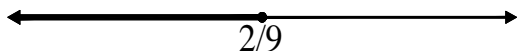# Kyote Practice Problems 3

1. The graphs of the lines $2x + 4y = 0$ and $-2x + y = 10$ intersect in a point. What is the x-coordinate of that point?

☐ A) 2   ☐ B) 4   ☐ C) -2 ☐ D) -4 ☐ E) 0

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

☐ A) $-9x \le 2$ ☐ B) $9x \le -2$ ☐ C) $-9x \ge -2$ ☐ D) $9x \ge 2$ ☐ E) $-9x \le -2$

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3. Multiply and simplify. $\dfrac{x^{12}}{x^2 - 1} \cdot \dfrac{x - 1}{x^2}$

☐ A) $\dfrac{x^{10}}{x - 1}$ ☐ B) $\dfrac{x^{10}}{x + 1}$ ☐ C) $\dfrac{x^{14}}{(x-1)(x^2-1)}$ ☐ D) $\dfrac{x^6}{x+1}$ ☐ E) $\dfrac{x^6}{x-1}$

4. Multiply. $(8x - 8y)^2$

☐ A) $64x^2 - 64xy + 64y^2$ ☐ B) $8x^2 - 8y^2$ ☐ C) $64x^2 - 64y^2$

☐ D) $64x^2 - 128xy + 64y^2$ ☐ E) $64x^2 + 64y^2$

5. Solve $5x + 2y = 15$ for x.

☐ A) $\frac{-2}{5}y + 3$ ☐ B) $\frac{-5}{2}y + 3$ ☐ C) $\frac{-2}{5}y + 15$ ☐ D) $\frac{2}{5}y + 3$ ☐ E) $\frac{5}{2}y + 15$

6. Simplify. $\dfrac{x^{12} + 9x^{10}}{x^3 + 9x^2}$

☐ A) $\dfrac{x^5(x^2+9)}{x+9}$ ☐ B) $x^9 + x^8$ ☐ C) $x^5(x+1)$ ☐ D) $\dfrac{x^8(x^2+9)}{x+9}$ ☐ E) $x^8(x+1)$

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7. Simplify. $5 - \frac{4-9}{5-4}$

- [ ] A) -8
- [ ] B) 10
- [ ] C) $\frac{-5}{4}$
- [ ] D) $\frac{5}{4}$
- [ ] E) $\frac{-4}{5}$

8. A boy has only dimes and quarters in his piggy bank. If he has 60 coins worth 12 dollars and 45 cents altogether, how many quarters does he have in his bank?

- [ ] A) 45
- [ ] B) 43
- [ ] C) 44
- [ ] D) 41
- [ ] E) 42

9. Solve $\frac{6x-9}{3} = \frac{x}{9}$ for x.

- [ ] A) $\frac{-3}{19}$
- [ ] B) $\frac{3}{17}$
- [ ] C) $\frac{27}{17}$
- [ ] D) $\frac{27}{19}$
- [ ] E) $\frac{-27}{17}$

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

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

11. One solution of $x^2 - x - 1 = 0$ is

- [ ] A) $-1 + \sqrt{5}$
- [ ] B) $\frac{-1+\sqrt{5}}{2}$
- [ ] C) $\frac{1-\sqrt{5}}{2}$
- [ ] D) $\sqrt{5} + 1$
- [ ] E) $-1 - \sqrt{5}$

12. Multiply. $(x^2 - y^2)(x^8 + y^8)$

- [ ] A) $x^{10} + x^8 y^2 - x^2 y^8 - y^{10}$
- [ ] B) $x^{16} + x^2 y^8 - x^8 y^2 - y^{16}$
- [ ] C) $x^{16} - y^{16}$
- [ ] D) $x^{10} - y^{10}$
- [ ] E) $x^{10} + x^2 y^8 - x^8 y^2 - y^{10}$

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13. Which fraction is the largest?

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

14. Simplify. $x - 6x(8x^2 + 9) - (6x^3 - 7x)$

☐ A) $-46x^3 - 52x$ ☐ B) $-54x^3 + x$ ☐ C) $-54x^3 - 60x$

☐ D) $-46x^3 - 38x$ ☐ E) $-54x^3 - 46x$

15. Assuming that a car gets 25 miles per gallon of gas, how many gallons of gas are required for the car to go 145 miles?

☐ A) 5.05 ☐ B) 6.05 ☐ C) 5.55 ☐ D) 5.30 ☐ E) 5.80

16. Subtract $2x^2 + 2x - 1$ from $9x - 9$.

☐ A) $2x^2 - 7x + 8$ ☐ B) $-2x^2 + 7x - 8$ ☐ C) $2x^2 - 7x - 10$

☐ D) $-2x^2 + 7x - 10$ ☐ E) $-2x^2 + 11x - 10$

17. What is 5 percent of 700?

☐ A) 3500 ☐ B) $\frac{7}{2}$ ☐ C) 35000 ☐ D) 350 ☐ E) 35

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

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

19. Simplify, assuming x is a positive number. $\sqrt{x^{14} + 16\,x^6}$
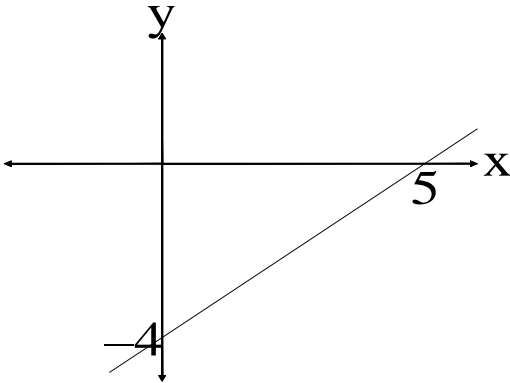
☐ A) $x^7 + 4\,x^3$ ☐ B) $x^4\sqrt{x^8 + 16}$ ☐ C) $x^{12} + 4\,x^4$

☐ D) $x^8 + 4\,x^4$ ☐ E) $x^3\sqrt{x^8 + 16}$

20. What is the greatest common factor of the two terms in the expression $x^8\,y^5 + x^3\,y^7\,z$

☐ A) y^5 ☐ B) $x^8\,y^7\,z$ ☐ C) $x^3\,y^5$ ☐ D) $x^3\,y^5\,z$ ☐ E) x^3

21. What is the equation of the line whose graph is shown below

☐ A) $y = \frac{-5}{4}\,x - 4$ ☐ B) $y = 5\,x - 4$ ☐ C) $y = \frac{4}{5}\,x - 4$

☐ D) $y = \frac{-4}{5}\,x - 4$ ☐ E) $y = \frac{5}{4}\,x - 4$

22. A line with slope 3 passes through the point $(0, 8)$. What is the y-coordinate of the point on the line with x-coordinate 4?

☐ A) 11   ☐ B) 15   ☐ C) 12   ☐ D) 20   ☐ E) 28

23. What is the perimeter, in feet, of a rectangle whose length is twice its width and whose width is 5 feet?

☐ A) 20   ☐ B) 30   ☐ C) 40   ☐ D) 10   ☐ E) 15

24. Simplify. $(-6\,x^7)^2$

☐ A) $36\,x^{14}$ ☐ B) $36\,x^9$ ☐ C) $-6\,x^{14}$ ☐ D) $-36\,x^9$ ☐ E) $-36\,x^{14}$

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

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

26. A buyer purchases 20 percent of the 27000 widgets in a warehouse's inventory. The next day, another buyer purchases 10 percent of the remaining widgets. How many widgets are left in the warehouse?
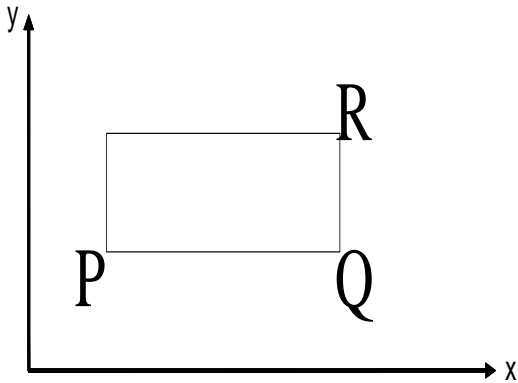
☐ A) 19710 ☐ B) 18900 ☐ C) 19440 ☐ D) 18630 ☐ E) 19170

27. A rectangle has length 12 inches and its perimeter is 6 times its width. What is its width in inches?

☐ A) 9 ☐ B) 36 ☐ C) 3 ☐ D) 6 ☐ E) 12

28. The rectangle below has vertices P, Q, and R. If P $= (8, 2)$ and R $= (9, 9)$ then Q $=$?

☐ A) $(8, 9)$ ☐ B) $(2, 8)$ ☐ C) $(9, 2)$ ☐ D) $(2, 9)$ ☐ E) $(9, 9)$

29. Find the value of $\frac{x}{x - 2y}$ when $x = -5$ and $y = -4$.

☐ A) $\frac{3}{8}$ ☐ B) $\frac{-5}{3}$ ☐ C) $\frac{5}{13}$ ☐ D) $\frac{13}{8}$ ☐ E) $\frac{1}{8}$

30. What is the least common denominator used to add the fractions $\frac{1}{24}$ and $\frac{3}{16}$?

☐ A) 384 ☐ B) 48 ☐ C) 16 ☐ D) 24 ☐ E) 8

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Key: Kyote Practice 3

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

Standards Table

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