
Math 082

Test 2 Practice
(Chapter 3,4,5)
(Fall 2019 Test 2 Form 1)

Name: _____

Score:

/150

Show all your work to receive full credit.

Problems 1-5 are worth 6 points each.

1. Is $(-1, 3)$ a solution of $2x + 3y = 7$?

2. Find the slope of the line joining the points $(-2, 6)$ and $(3, -2)$.

3. Determine if $(2, -4)$ is a solution to the the system of equations:

$$\begin{cases} \frac{1}{3}x - y = -1 \\ \frac{3}{4}x + \frac{1}{2}y = \frac{13}{4} \end{cases}$$

4. Simplify the expression $(-5z^5)(3z^3)(2z^{-2})$

5. Evaluate $(-6)^{-2}$.

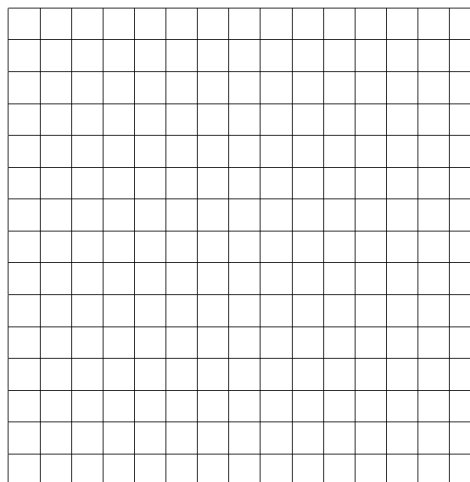
Problems 6-20 are worth 8 points each.

6. Write the equation of the line passing through the points $(4, 5)$ and $(2, -3)$. Write the equation in slope-intercept form.

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7. Write the equation of the line perpendicular to $5x - 3y = -4$ that passes through the point $(-5, 2)$.

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8. Graph $x - 2y = -4$ by first finding the x - and y -intercepts of the equation. Label points.

x -intercept: (,)
 y -intercept: (,)



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9. Simplify using positive exponents: $\frac{(2a^7b^{-8})^5}{2^3a^{-9}b^{-3}}$

Perform the indicated operations and simplify.

10. $(9m^2 - 8m - 13) - (m^2 - 8m - 24)$

11. $-\frac{1}{3}x^2(3x^2 - 12x + 9)$

12. $(5m + 4)(m^2 - 2m + 1)$

13. $(2y + w)^2$

14. $(5 - 2x)(5 + 2x)$

15. Divide and simplify:

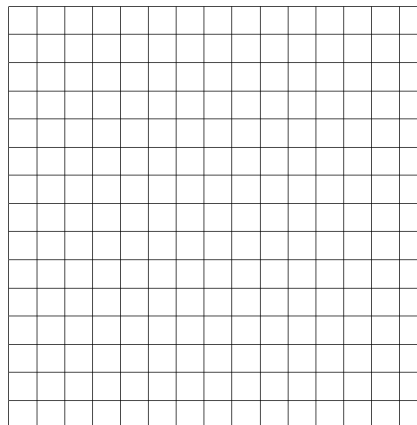
$$\frac{32x^4 - 12x^3}{4x^3}$$

16. Simplify and write your answer in **scientific notation**: $(8 \times 10^7)(1.5 \times 10^{-3})$

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17. Find the solution to the system of linear equations by graphing. If there is no solution or infinitely many solutions state so.

$$-2x + y = 3$$

$$4x - 2y = 8$$



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18. Find the solution to the system of linear equations by **substitution**. If there is no solution or infinitely many solutions state so.

$$6x + 3y = -12$$

$$-3x + y = 1$$

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19. Find the solution to the system of linear equations by **elimination**. If there is no solution or infinitely many solutions state so.

$$x + 2y = 2$$

$$3x - y = -22$$

20. Write a system of linear equation for the following. Solve and label your answers.

The sum of two numbers is 151, while the difference of the two numbers is 25. What are the two numbers?

EXTRA CREDIT. Each problem is worth 5 points.

1. Write a system of linear equations for the following. Solve and label your answers.

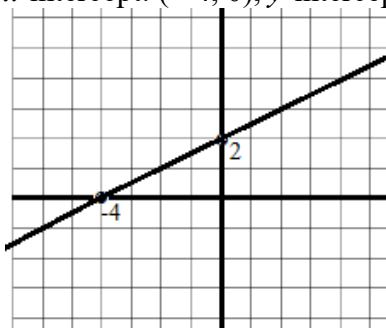
There were 287 tickets sold for a basketball game. The activity cardholders' tickets cost \$0.50 and the non-cardholders' tickets cost \$0.55. The total amount of money collected was \$149.50. How many of each kind of ticket were sold?

2. Multiply and simplify:

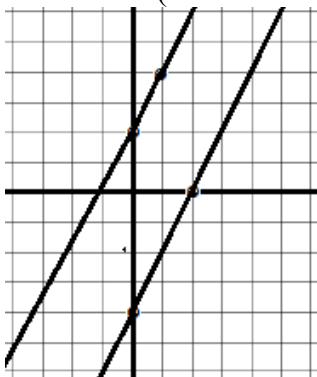
$$(6m^2 + 10)(6m^2 - 10)$$

Answers

1. yes
2. $-\frac{8}{5}$
3. no
4. $-30z^6$
5. $\frac{1}{36}$
6. $y = 4x - 11$
7. $y = -\frac{3}{5}x - 1$
8. x -intercept: $(-4, 0)$, y -intercept: $(0, 2)$



9. $\frac{4a^{44}}{b^{37}}$
10. $8m + 11$
11. $-x^4 + 4x^3 - 3x^2$
12. $5m^3 - 6m^2 - 3m - 4$
13. $4y^2 + 4yw + w^2$
14. $25 - 4x^2$
15. $8x - 3$
16. 1.2×10^5
17. no solution (the lines are parallel)



18. $x = -1, y = -2$
19. $x = -6, y = 4$
20. equations: $x + y = 151; x - y = 25$. Solution: 88, 63
Extra Credit 1) equations: $x + y = 287; .5x + .55y = 149.5$.
Solution: 120 non-cardholder tickets, 167 cardholder tickets
Extra Credit 2) $36m^2 - 100$