

MTH 28.5, Test 1, V. 3, 09/24/26

Prof. Luis Fernández

NAME: _____

There are 22 questions. Some are multiple choice and some are free response.

Each question is worth 5 points, totaling 110 points.

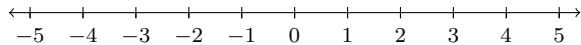
Any points over 100 and up to 110 will count as extra credit.

For multiple-choice questions, just circle your answer.

For free-response questions, **SHOW ALL WORK** to receive credit.

1. Solve the inequality and express the answer on the number line provided

$$6x - 14 + 2(x - 5) < 0.$$



2. Find

$$38 - (-30) + (-15) - 63.$$

3. Simplify: $\frac{4}{5} \cdot \frac{7}{16} =$

4. Given the function $f(x) = 3x^2 + 5x - 2$, calculate the following values:

- $f(0) =$ _____
- $f(2) =$ _____
- $f(-2) =$ _____
- $f(x + 1) =$ _____
- $f(-x) =$ _____

5. Subtract: $(6x^2 + 4x - 4) - (-7x^2 - 4x - 5)$

6. Evaluate the expression:
 $9 + 3 \cdot 7 - (8 + 3 \cdot 6) =$

7. Solve: $3(7x + 1) = 4(5x + 1) + 14$.

Circle the answer.

(a) $\frac{9}{20}$

(b) -13

(c) 15

(d) $\frac{21}{41}$

8. Solve the equation $8x - 7 = 2x - 3$.

9. Simplify: $\frac{1}{8} + \frac{1}{12} - \frac{1}{16} =$

10. Simplify the expression $(3x^6y^3)(7x^{15}y^{11})$

11. Simplify the numerical expression

$$\left(\frac{10}{11}\right)^0.$$

12. Simplify the expression $\frac{30x^{14}y^{17}z^{17}}{6x^9y^{12}z^{14}}$

13. Add: $(7x^3 - 4x^2 + 4x - 2) + (5x^3 - 7x^2 + x - 6)$

14. For the polynomial $x^2 + x^5 - 3x - 5$,

a) Determine the coefficient and the degree of each term.

Term	Coefficient	Degree
x^2		
x^5		
$-3x$		
-5		

b)

The degree of the polynomial is _____,

The leading term is _____ ,

The leading coefficient is _____ .

15. Multiply the polynomials: $(x - 1)(x + 3)$

16. Write in scientific notation.

0.0039

17. Write in scientific notation:

63400000

18. Square the binomial: $(x - 5)^2$.

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

Circle the answer

(a) $6x^3 + 6x^2 + 6x - 18$

(b) $6x^3 + 18x^2 + 18x - 18$

(c) $6x^3 + 18x^2 + 6x - 18$

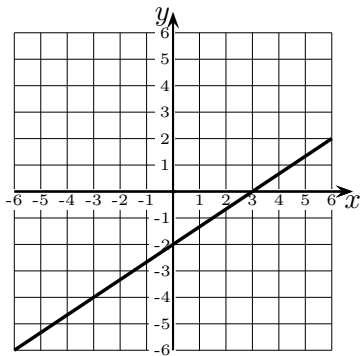
(d) $6x^3 + 6x^2 + 18x - 18$

20. Write in decimal notation

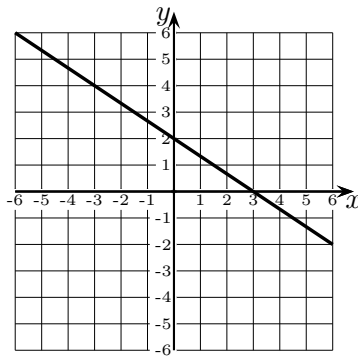
$5.4 \times 10^{-4} =$ _____

21. Which of the following is the graph of the equation $2x - 3y = -6$? (Circle the answer).

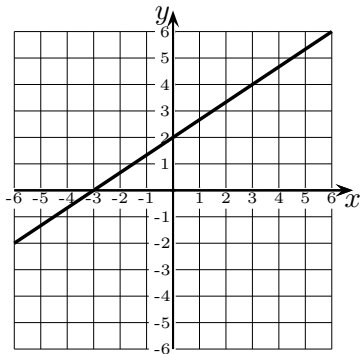
(a)



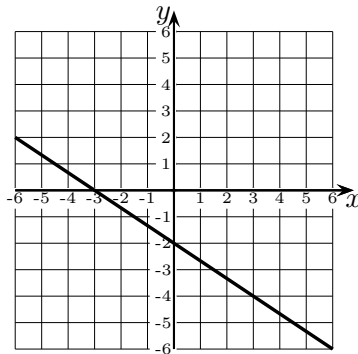
(c)



(b)

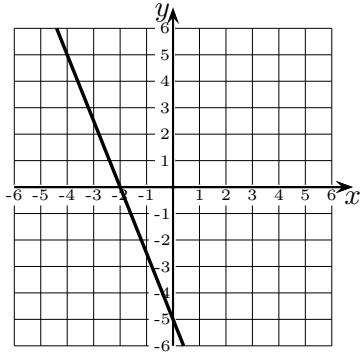


(d)

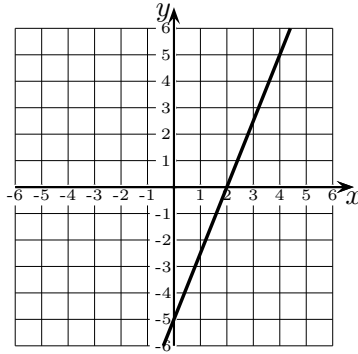


22. Which of the following is the graph of the equation $10x - 4y = 20$? (Circle the answer).

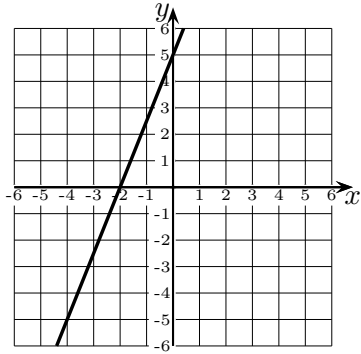
(a)



(c)



(b)



(d)

