

MTH 06, Test 1, V. 3, 03/01/22

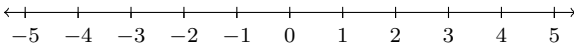
Prof. Luis Fernández

NAME: _____

There are 30 questions. Some are multiple choice and some are free response.
 Each question is worth 4 points, totalling 120 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. Simplify: $\frac{1}{8} + \frac{1}{12} - \frac{1}{16} =$

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

4. Circle the graph of the solution to the inequality:

$$-1 - (-2 + x) \leq 3x + 21$$

- (a) (b) (c) (d)
- Four number lines are shown, each with arrows at both ends and tick marks from -6 to 6. Each line has a solid black dot and a ray extending in one direction. (a) Dot at -5, ray to the right. (b) Dot at -5, ray to the left. (c) Dot at 5, ray to the left. (d) Dot at 5, ray to the right.

5. Solve for y and circle the answer:

$$z = 4x + 9y.$$

(a) $y = \frac{z}{9} - 4x$

(b) $y = \frac{z + 4x}{9}$

(c) $y = \frac{z - 4x}{9}$

(d) $y = 9(z - 4x)$

6. Solve for x .

$$\frac{10}{3}x + \frac{1}{6} = \frac{7}{3}x + \frac{37}{6}$$

7. Divide or state that the division is undefined:
(Note: Your answer must be a fraction.)

$$-\frac{3}{2} \div \left(-\frac{9}{4}\right) =$$

$$15 \div \left(-\frac{3}{2}\right) =$$

8. Find

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

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

Circle the answer.

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

(b) -13

(c) 15

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

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

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

12. Use the formula $F = \frac{9}{5}C + 32$ for converting degrees Celsius into degrees Fahrenheit to find the Fahrenheit measure of the Celsius temperature $C = 25$. **Circle the answer.**

(a) 77

(b) 37

(c) 51.4

(d) 257

13. Simplify the expression $\left(\frac{10x^4y^3}{5x^6y^{-3}}\right)^4$

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

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

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

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

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

19. Find the x and y intercepts of the graph of the equation $y = x + 6$.

The x intercept is: _____

The y intercept is: _____

20. Simplify the numerical expression

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

21. 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) $6x^3 + 6x^2 + 18x - 18$

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

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

24. Write in scientific notation:

63400000

25. Divide and write in scientific notation:

$$\frac{1.2 \times 10^3}{4.8 \times 10^7}$$

Circle the answer

(a) 2.5×10^{-5}

(b) 0.25×10^{-4}

(c) 4×10^{10}

(d) 4×10^{-5}

26. Write in scientific notation.

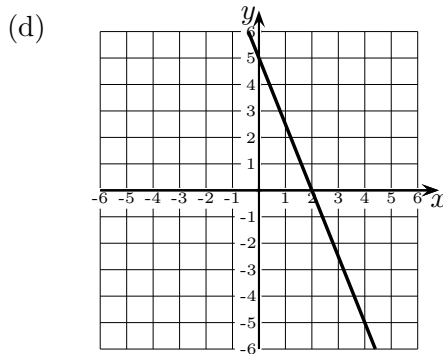
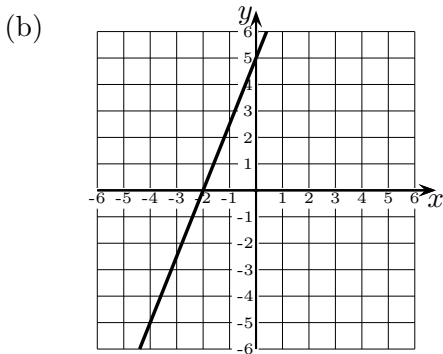
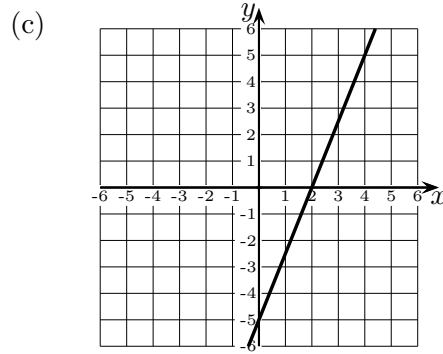
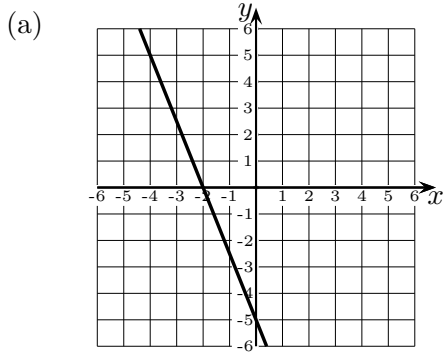
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27. Write in decimal notation

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

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

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



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

