

MTH 06, Test 1, V. 4, 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. Divide or state that the division is undefined:

(Note: Your answer must be a fraction.)

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

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

2. Find

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

3. Solve for y and circle the answer:

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

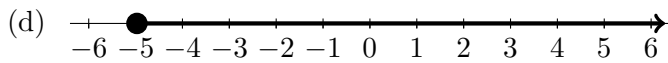
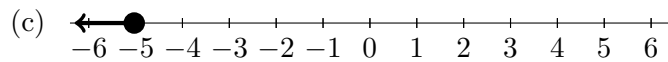
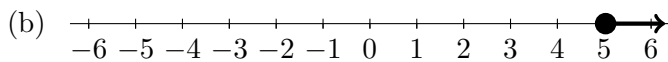
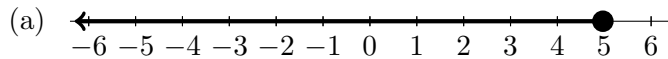
- (a) $y = \frac{z - 4x}{9}$
(b) $y = 9(z - 4x)$
(c) $y = \frac{z + 4x}{9}$
(d) $y = \frac{z}{9} - 4x$

4. Solve for x .

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

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

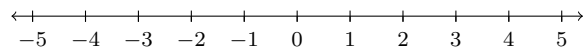
$$-1 - (-2 + x) \leq 3x + 21$$



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

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

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



8. 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) 51.4

(b) 257

(c) 37

(d) 77

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

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

11. Solve: $3(7x + 1) = 4(5x + 1) + 14$.
Circle the answer.

- (a) 15
- (b) $\frac{21}{41}$
- (c) -13
- (d) $\frac{9}{20}$

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

13. Write in decimal notation

$$5.4 \times 10^{-4} = \underline{\hspace{2cm}}$$

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

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

16. Simplify the numerical expression

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

17. 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 _____ .

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

The x intercept is: _____

The y intercept is: _____

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

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

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

21. Write in scientific notation.

0.0039

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

23. Divide and write in scientific notation:

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

Circle the answer

(a) 4×10^{10}

(b) 4×10^{-5}

(c) 0.25×10^{-4}

(d) 2.5×10^{-5}

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

25. Write in scientific notation:

63400000

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

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

Circle the answer

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

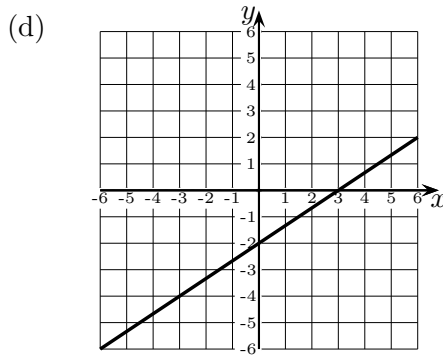
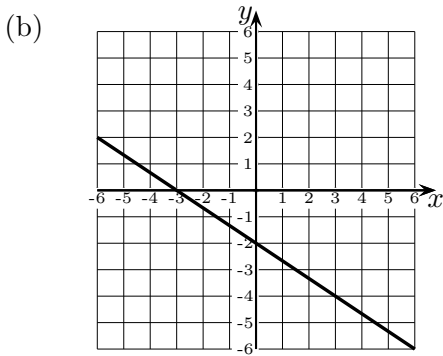
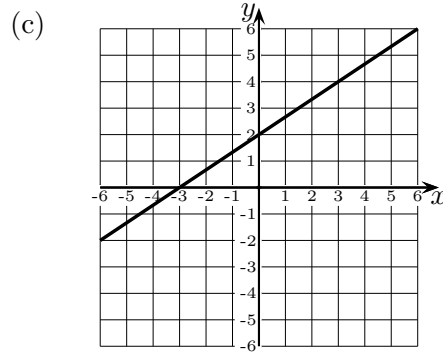
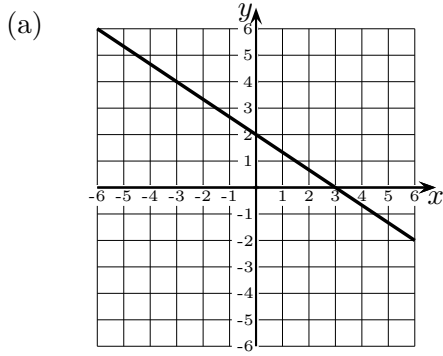
(b) $6x^3 + 6x^2 + 18x - 18$

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

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

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

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



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

