MTH 06, Test 1, V. 1, 09/20/21 Prof. Luis Fernández

NAME:_____

There are 22 questions. Some are multiple choice and some are free response.
Each question is worth 5 points over 100 (so 10 points are extra credit).
For multiple-choice questions, just circle your answer.
For free-response questions, SHOW ALL WORK to receive credit.

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

2. Evaluate: $13 - 3(8 - 4) =$

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

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

(b) 15

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

(d) -13

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

5. Simplify: $4 \cdot \frac{5}{8} =$

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

7. Evaluate the expressions for $x = 6$, $y = 9$, and $z = 5$.

$x + 6 \quad = \quad$ _____

$2z - 6 \quad = \quad$ _____

$xyz \quad = \quad$ _____

$y + z \quad = \quad$ _____

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) 257

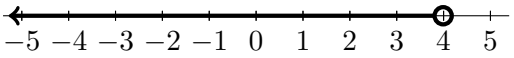
(b) 51.4

(c) 77

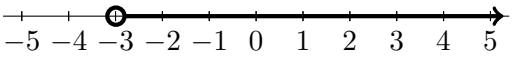
(d) 37

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

10. Express each graph below as an inequality using the variable x. Enter your answers as "$x >$ number", or "$x <$ number", or "$x \geq$ number", or "$x \leq$ number", as appropriate.



Inequality: _____



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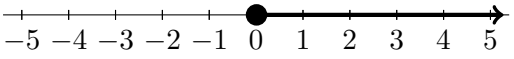

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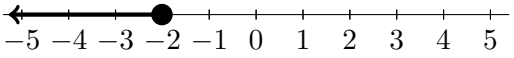
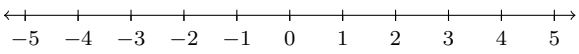


Inequality: _____

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

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

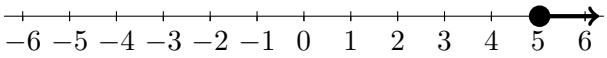


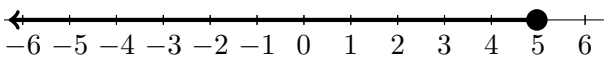
12. Solve the inequality and express the answer as an interval.

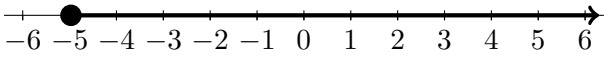
$$x - \frac{4}{5} > \frac{6}{5}x - 2.$$

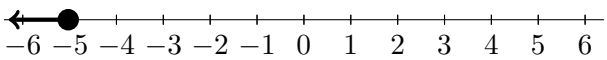
13. **Circle** the graph of the solution to the inequality:

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

(a) 

(b) 

(c) 

(d) 

14. Solve for x.

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

15. Solve for y:

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

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

(b) $y=\dfrac{z-4x}{9}$

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

(d) $y=\dfrac{z+4x}{9}$

16. The volume of a pyramid is given by the equation

$$V=\frac{1}{3}Bh.$$

Solve for B.

17. Solve for s when $tw = 6s - a$.
Circle the answer.

(a) $s = tw - a$

(b) $s = \dfrac{tw + a}{6}$

(c) $s = tw - a$

(d) $s = -\dfrac{tw}{a}$

18. Find

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

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

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

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

20. Solve the equation $8x + 10 = -7$.

21. Solve for C in the formula $F = \frac{9}{5}C + 32$.

22. Solve the equation $|x - 2| = 3$.