

Please do not write on this test sheet. NUMBER the problems on your worksheet and write your answers on the answer sheet. Turn in all papers when you finish your test.

Solve each equation.

1.  $1.5 + 2z = -3(0.2z + 2.1)$

2.  $4(2x + 3) + x = 3(x - 3)$

3.  $\frac{1}{2}y - \frac{3}{10} = \frac{2}{10} - \frac{1}{2}y$

4. Translate the words into an algebraic equation. Then solve the equation.  
Three times the difference of a number and seven is one less than twice the number. Find the number.

5. Solve the inequality. Graph the solution set and write the solution in interval notation.

$$-4x + 14 < 7x - 30$$

6. Graph the line  $y = \frac{1}{3}x + 2$ . Label at least two points (with their coordinates) on the line.

7. Find the slope of the line passing through the points  $(-1, 4)$  and  $(3, -4)$ .

8. A given line has a slope of  $\frac{3}{4}$ . (a) What is the slope of the line parallel to the given line?  
(b) What is the slope of the line perpendicular to the given line?

9. Find the x- and the y-intercepts:  $2x - 4y = -8$ .

10. Write an equation of the line whose slope is  $-\frac{1}{4}$  and whose y-intercept is  $(0, 3)$ .

PROBLEMS 11-14: PERFORM THE INDICATED OPERATIONS

11.  $(10x^2 + 7x - 3) + (-4x^2 + 2x - 7)$

12.  $(3x - 2)(x + 2)$

13.  $(7x + 1)^2$

14.  $\frac{x^2 - x - 6}{x + 2}$

15. Simplify the expression. Write the answer with positive exponents.  $\left(\frac{x}{y^3}\right)^{-2}$

PROBLEMS 16-20: Completely factor each polynomial.

16.  $x^2 - 4x - 12$

17.  $12x^2 + 17x + 6$

18.  $5x^2 - 20$

19.  $4x^2 + 20x + 25$

20.  $21xy^2 - 35x^2y^5 + 7xy$

21. Simplify:  $\frac{y^2 - 5y}{7y - 35}$

22. Divide:  $\frac{(y-4)^2}{y+3} \div \frac{y^2-4y}{5y^2}$

23. Subtract:  $\frac{x-1}{x+3} - \frac{x^2-5}{x^2+2x-3}$

24. Solve:  $\frac{4y}{y-4} + 5 = \frac{5y}{y-4}$

25. Solve the following:

Mr. Crocker can paint his house by himself in 3 days. His son can paint the house by himself in 4 days. Find how long it takes to paint the house if they work together.

**MATH 0304 FINAL PRACTICE TEST ANSWERS**

1.  $z = -3$

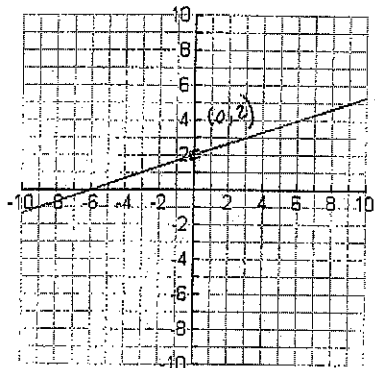
2.  $x = -\frac{7}{2}$

3.  $y = \frac{1}{2}$

4.  $x = 20$

5.  $x > 4$  ( $4, \infty$ )

6.



7. -2

8. a)  $\frac{3}{4}$     b)  $-\frac{4}{3}$

9.  $(-4, 0)$   $(0, 2)$

10.  $y = -\frac{1}{4}x + 3$

11.  $6x^2 + 9x - 10$

12.  $3x^2 + 4x - 4$

13.  $49x^2 + 14x + 1$

14.  $x - 3$

15.  $\frac{y^6}{x^2}$

16.  $(x - 6)(x + 2)$

17.  $(3x + 2)(4x + 3)$

18.  $5(x - 2)(x + 2)$

19.  $(2x + 5)^2$

20.  $7xy(3y - 5xy^4 + 1)$

21.  $\frac{y}{7}$

22.  $\frac{5y(y-4)}{y+3}$

23.  $-\frac{2(x-3)}{(x-1)(x+3)}$

24.  $y = 5$

25.  $1\frac{5}{7}$  days