

## **Assessment for those considering TMATH 98**

### **Instructions for working the problems:**

- You should allow yourself 30-60 minutes to solve the problems.
- Have plenty of scratch paper to take the test with.
- Ideally, you should plan to work the problems in one session while focused exclusively on the test problems.
- Do not use any graphing tools or a calculator to create a testing environment that will accurately test your math skills.
- Turn off all screens so you can focus and so that this will be a true indication of what you can do.
- Keep a record of your results so that you can easily find the problems you did solve and those you did not.
- If you do not get the correct answer on the first try, check your work and look for errors, or start again with perhaps a different method.

**If you can complete all problems correctly, you have the kind of preparation necessary to do well in Math 98.**

## Practice Problems

1. Use a table of ordered pairs and graph the equation,  $Y=-2x+2$

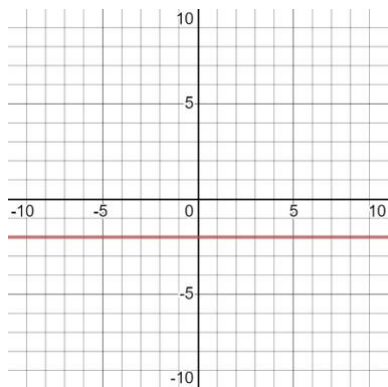
X	Y	(X,Y)

2. Use X and Y intercepts to graph the equation,  $3X+5Y=15$

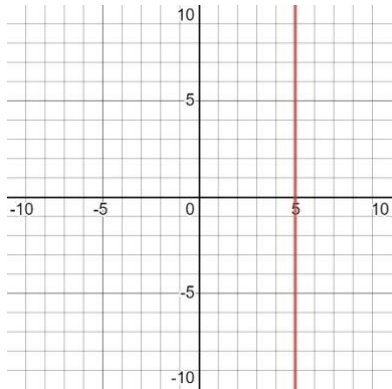
3. For the standard form equation  $4X+8Y=6$

Write the equation in slope-intercept form:

4. Write the equation for this line below:



5. Write the equation for the line below:



6.  $Y=12x-8$

What is the **slope** of a line parallel to this line?

What is the **slope** of a line perpendicular to this line?

7. For the data below, create a scatter gram, draw a line best fit, write a linear equation based on your line, your answer being your prediction to the question. Let  $X=$  Age and  $Y=$  Time in minutes.

Age	Time in minutes to solve math puzzle
4	1
3	3
8	3

12	0
16	2
19	6

8. Write 230,000,000,000 in scientific notation.
9. Solve the equation:  $-5x + 20 = 25$
10. Evaluate:  $30 - 12 \div 3 \times 2 =$
11. In a cafeteria, 3 coffees and 4 donuts cost \$10.05. In the same cafeteria, 5 coffees and 7 donuts cost \$17.15. How much do you have to pay for 4 coffees and 6 donuts?
12. Multiply  $(-9 + i)(-1 - i)$ .
13. Solve:  $36x^2 - 49 = 0$
14. Simplify:  $\frac{x+y}{\frac{5}{4}}$
15. Multiply the following rational expressions
- $$\frac{x^2 + 7x + 12}{x^2 - 9} \cdot \frac{x^2 - 2x - 3}{x^2 + 6x + 8}$$
16. Simplify:  $(2x^{-3}y^4)^3(x^3 + y)^0 / (4xy^{-2})^3$

17. What is the slope of a line perpendicular to the line  $x = -3$ ?

18. Solve the equation:

$$-0.25x^2 + 1.5 = -10.75$$

19. From 5 employees at a company, a group of 3 employees will be chosen to work on a project. How many different groups of 3 employees can be chosen?

- A) 3
- B) 5
- C) 6
- D) 10
- E) 15

20. Solve the equation:

$$-3(5 - 6) - 4(2 - 3) =$$

21.  $5y(2y - 3) + (2y - 3) =$

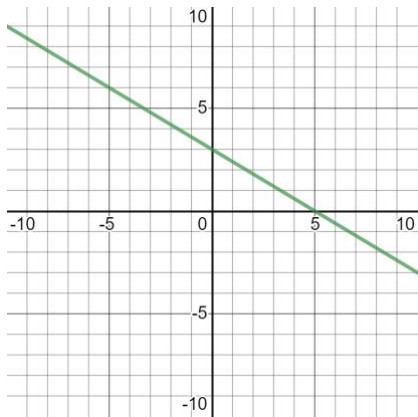
- A.  $(5y + 1)(2y + 3)$
- B.  $(5y + 1)(2y - 3)$
- C.  $(5y - 1)(2y + 3)$
- D.  $(5y - 1)(2y - 3)$
- E.  $10y(2y - 3)$

# Answers

1.

X	Y	(X,Y)
0	2	(0,2)
1	0	(1,0)
2	-2	(2,-2)

2. Y-intercept ( 0,3) X-intercept ( 5,0)



3.  $Y = -\frac{1}{2}X + \frac{3}{4}$

4.  $Y = -2$

5.  $X = 5$

6.  $\parallel$  Line: slope = 12

$\perp$  Line: slope =  $-\frac{1}{12}$

7. Answers will vary. Answers should consist of a reasonable equation that best represents all of the data provided and explanation.

8.  $2.3 \times 10^{11}$

9. -1

10. 22
11. 4 coffees and 6 donuts cost \$14.2.
12.  $10 + 8i$
13.  $X = (7/6)$  or  $X = (-7/6)$
14.  $(4x + 4y)/5$
15.  $\frac{x + 1}{x + 2}$
16.  $(1/8)(y^{18} / x^{12})$
17. 0
18. -7, 7
19. D
20. 7
21. B