

Math 111, Fall 2004

Final Exam

Name (print): _____

Directions

1. Time limit: 1 hour 50 minutes.
2. To receive credit on any problem, you must show work that explains how you obtained your answer or you must explain how you obtained your answer.
3. Write your work *in pencil* in the provided spaces. Your work must be neat, organized, and legible. Draw a box around your answers.
4. You may use a calculator, but you may not use any notes, books, or other resources. You may not use a cell phone.
5. If a problem does not specify that an answer be written in fraction notation, mixed number notation, or decimal notation, then write the answer in the notation that you think is most appropriate for the problem. *All numerical fractions must be expressed in lowest terms.*
6. You are expected to do your own work. You are neither to receive nor to give any help on the exam.

I have read the directions.

Signature: _____

Student ID number: _____

1. Evaluate $(10 - 68)[(80 + 15 \div 5) - (6 \cdot 6 - 3 \cdot 3)]$.

2. Evaluate $\frac{(-1.1)^2 + 2.39}{0.4}$.

3. Fill in the table so that the numbers across each row are equal.

Fraction	Decimal	Percent
$\frac{3}{8}$		
	0.78	
		0.25

4. Solve the equation $3(3 + x) - 10 = 6x + 3 - x$.

5. Solve the equation $\frac{2}{3}x - \frac{1}{2} = x + \frac{3}{5}$.

6. Add $\frac{2}{7} + \frac{3x}{4}$.

7. Add $4x - 2(8x - 3) + 3x - 7$.

8. Multiply $3y(5y^3 - 6y)$.

9. One hundred forty-four and four-tenths is $9\frac{1}{2}\%$ of what number?

10. Complete the following chart for the equation $y = 2x - 1$, then draw the graph for the equation.

x	y
0	
	3
3	

11. Draw the graph of $x = -1$.

12. Evaluate $\frac{(3 - 2)^2 + 4}{3^2 - 9}$.

13. Evaluate $|-7| - |-12|$.

14. Evaluate $a^2 - b^2$ if $a = 2$ and $b = -4$.

15. Solve the equation $1.2x - 1.3 = 2.4x + 0.02$.

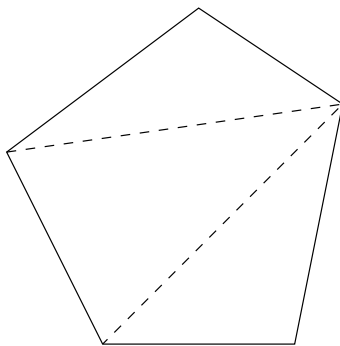
16. A punch recipe calls for mixing 4 parts of cranberry juice with 7 parts of apple juice. Find how much cranberry juice should be mixed with 84 ounces of apple juice.

17. Find the diagonal of the rectangle with length 5 feet and height 12 feet.

18. Find the area of the rectangle with length $7\frac{5}{8}$ feet and height $3\frac{1}{2}$.

19. Grandma Sarah bakes her pies in circular dishes with bottoms that have diameter 8 inches. Find the area of a table top that would be covered by one pie dish.

20. A pentagon is a figure with 5 sides as shown below. Observing that a pentagon can be decomposed into 3 triangles, find the sum of the five interior angles of a pentagon.



21. Each of the following illustrates an addition or multiplication property (associative, commutative, identity, inverse, distributive). Fill in the blank with the appropriate property.

(a) $3 + (5 + 4) = 3 + (4 + 5)$ _____

(b) $3 + (5 + 4) = (3 + 5) + 4$ _____

(c) $3(5 + 4) = 3(5) + 3(4)$ _____

(d) $3 \cdot 1 + (5 + 4) = 3 + (5 + 4)$ _____

22. Prime factorize the number 1540.

23. If the product of a number and 5 is subtracted from 40, the result is the same as three times the number. Find the number.

Fill in the blanks.

(a) Let _____ be the number.

(b) An equation to solve the problem is _____.

(c) Solve the equation and answer the question, "Find the number."

24. Using a laser, a technician slices thin pieces of aluminum off the end of a rod that is $\frac{9}{10}$ inch long. How many $\frac{1}{50}$ inch wide slices can be cut from the rod?

25. Jose's hourly wage increased from \$10.25 per hour to \$10.45 per hour. What is the percent increase in his wages to the nearest whole percent?

End of the exam.