Math 80 **Final** **Fall 2007**

1. Evaluate: $(4 \div 2)^4 - 4^2 \div 2^2$

   a. 12 b. 8
   c. 0 d. -3

2. Simplify: $3 - (x - y) + (x - y)$

   a. 0 b. $3 - 2x - 2y$
   c. 3 d. $3 + 2x + 2y$

3. Solve: $2x + 6 = 3x + 9$

   a. 0 b. 1
   c. -3 d. 3

4. Solve: $-(x + 2) < -2(-2x + 5)$

   a. $x > \frac{12}{5}$ b. $x < -4$

   c. $x > \frac{8}{5}$ d. $x < -\frac{12}{5}$

5. Evaluate: $-2x^2 - 6x + 8$, when $x = -2$

   a. -6 b. 28
   c. 6 d. 12

6. Express **eight less than twice a number** as an algebraic expression.

   a. $8 - 2x$ b. $2x - 8$
   c. $2(8 - x)$ d. $2(x - 8)$

7. If 10 cups of flour are needed to make 3 loaves of bread, how many cups of flour are needed to make 17 loaves?

a. $56\frac{2}{3}$ b. $5\frac{1}{10}$

c. 27 d. $41\frac{1}{3}$

8. Simplify: $\sqrt{x^4y^5z^6}$

a. $x^2y^2z^3$ b. $x^2y^2z^3\sqrt{y}$

c. $xyz\sqrt{xy^4z^5}$ d. $x^2\sqrt{y^5z^6}$

9. Perform the indicated operation: $(x-5)(x^2+5x+25)$

a. x^3-125 b. x^3+50x^2-125

c. $x^2-10x+25$ d. $x^3-10x^2-50x-125$

10. Perform the indicated operation: $(5x-2y+9)-(2x-5y+1)$

a. $7x-7y+10$ b. $3x-7y+8$

c. $3x-7y+10$ d. $3x+3y+8$

11. Simplify: $\frac{3}{4x^2-1}+\frac{4x}{2x+1}$

a. $\frac{8x^2-4x+3}{4x^2-1}$ b. $\frac{6x-3}{4x^2+2x}$

c. $3+4x$ d. $\frac{3+4x}{4x^2-1}$

12. Simplify: $\frac{x^2-x^3}{x^4} \div \frac{1-x}{x}$

a. $\frac{1}{x}$

b. $\frac{x^3-x^4}{x^4-x^5}$

c. $\frac{x^4-x^3}{x^4-x^5}$

d. $\frac{x^3}{x^5}$

13. How much interest will Tom pay if he borrows $600 for 2 years at 9% simple interest? (Use: I = prt)

a. $10,800

b. $801

c. $108

d. $81

14. A butcher combined ground beef that cost $3.50 per pound with ground beef that cost $4.10 per pound. How many pounds of each were used to make 80 pounds of a mixture that sells for $3.65 per pound?

a. 20 lbs @ $3.50
60 lbs @ $4.10

b. 30 lbs @ $3.50
50 lbs @ $4.10

c. 50 lbs @ $3.50
30 lbs @ $4.10

d. 60 lbs @ $3.50
20 lbs @ $4.10

15. Paola can roller skate 2 miles per hour faster than she can skateboard. She roller skates for 6 miles and then skateboards for 2 miles. If the total time of her outing is $2\frac{1}{2}$ hours, find the rate at which she roller skates and skateboards.

a. roller skates 6 mph, skateboards 4 mph
b. roller skates 3 mph, skateboards 1 mph
c. roller skates 4 mph, skateboards 2 mph
d. roller skates 6 mph, skateboards 3 mph

16. Factor completely: $5x^2 + 5x - 360$

a. $(5x - 9)(x + 40)$ b. $5(x - 8)(x + 9)$
c. $5(x + 8)(x - 9)$ d. $5(x - 8)(x - 9)$

17. Simplify: $\frac{8z^{-4}}{32z^{-2}}$

a. $\frac{4}{z^2}$ b. $\frac{1}{4z^2}$

c. $4z^2$ d. $\frac{x^6}{4}$

18. Factor completely: $2x^2 - 32$

a. $(2x - 4)(x - 8)$ b. $2(x - 2)(x + 8)$
c. $2(x - 4)(x + 4)$ d. $(2x - 8)(x + 4)$

19. Simplify: $\frac{1}{4^{-2}}$

a. -16 b. $-\frac{1}{4}$

c. 16 d. $\frac{-1}{8}$

20. Insert one of the following to make a true statement. $|3 - 5|\ ?\frac{22}{11}$

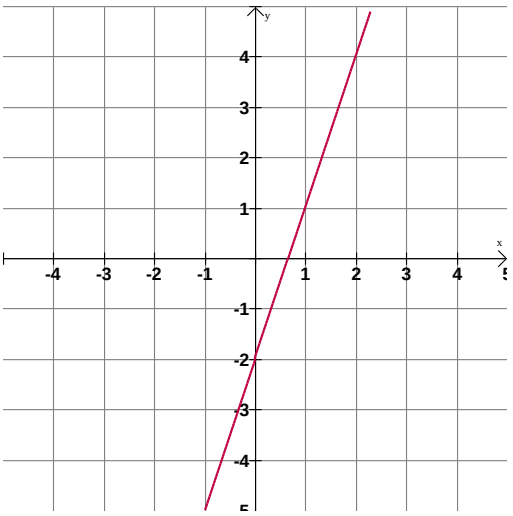
a. < b. >

c. = d. ≠

21. Write in slope-intercept form, an equation of the line with a slope of -12 passing through the point (-3,0).

a. y = -12x b. y = -3x - 12
c. y = -12x – 36 d. y = -12x + 3

22. What equation is shown in the graph?



a. $y = 3x - 2$
b. $y = 3x + 2$
c. $y = \frac{1}{3}x + 2$
d. $y = -\frac{1}{3}x - 2$

23. The x-value of the solution for this system of equations is:

$y = 2x - 4$
$y = -2x + 8$

a. $x = 2$
b. $x = 3$
c. $x = 1$
d. $x = 4$

24. Which order pair is a solution of the system of equations?

$x + 2y = -6$
$3x + 2y = -12$

a. (0, -6)
b. (2, -4)
c. (4, -5)
d. $(-3, -\frac{3}{2})$

25. Multiply: $3(\sqrt{5} - \sqrt{x})$

a. $3\sqrt{5} - 3\sqrt{x}$
b. $\sqrt{15} - \sqrt{3x}$
c. $15 - 3x$
d. $\sqrt{15 - 3x}$

Answers
Math 80
Final
Fall 07

1	a
2	c
3	c
4	c
5	d
6	b
7	a
8	b
9	a
10	d
11	a
12	a
13	c
14	d
15	c
16	b
17	b
18	c
19	c
20	c
21	c
22	a
23	b
24	d
25	a