This review does not include all topics covered on your Final Exam. However, it will provide a good review of most of the topics. The Math 0097 Final Exam will contain at most 40 multiple choice questions.

Choose the best answer for each question.

1. When simplified \( \frac{-5(2 + 1) + 5 - 8}{-2 - 4} \) is
   A. 2
   B. 3
   C. \( \frac{3}{2} \)
   D. \( \frac{7}{2} \)

2. If \( x = -3 \) and \( y = 2 \), then \( 3x^2 - xy + 5y^2 \) is
   A. 107
   B. 95
   C. 53
   D. 41

3. When simplified \( \left[ 2(x - 3) + 2 \right] - \left[ 4(x - 1) - 2x \right] \) is
   A. \( 4x - 8 \)
   B. \( -2x \)
   C. 0
   D. 8

4. The solution set for \( 10y + 9 = 19 \) is
   A. \( \left\{ \frac{14}{5} \right\} \)
   B. \( \left\{ 1 \right\} \)
   C. \( \left\{ 0 \right\} \)
   D. \( \left\{ \frac{-71}{10} \right\} \)

5. The solution set for \( 6x - 4 - 4x = 2x - 4 \) is
   A. \( \{2\} \)
   B. \( \left\{ \frac{2}{3} \right\} \)
   C. \( \emptyset \)
   D. \( \{x \mid x \text{ is a real number}\} \)

6. The solution set for \( -y - 2(2y - 1) = 5(1 - y) \) is
   A. \( \{-2\} \)
   B. \( \emptyset \)
   C. \( \{2\} \)
   D. \( \{x \mid x \text{ is a real number}\} \)

7. When simplified completely \( \frac{x^8}{y^3} \) is equivalent to
   A. \( \frac{x^8}{y^4} \)
   B. \( \frac{1}{x^8 y^4} \)
   C. \( \frac{y^4}{x^8} \)
   D. \( x^8 y^4 \)

8. \( -5^0 \) is equivalent to
   A. 5
   B. 1
   C. \( -1 \)
   D. \( -5 \)
9. When simplified completely 
\[ x^5 \cdot x \cdot x^2 \] is
A. \[ \frac{1}{x^6} \]
B. \[ \frac{1}{x^7} \]
C. \[ x^{-7} \]
D. \[ x^{-6} \]

10. \[ 1.5 \times 10^5 \] is equivalent to
A. \[ 0.0000015 \]
B. \[ 0.000015 \]
C. \[ 150,000 \]
D. \[ 1,500,000 \]

11. \[ 0.0000037 \] written in scientific notation is
A. \[ 3.7 \times 10^{-6} \]
B. \[ .37 \times 10^{-5} \]
C. \[ 3.7 \times 10^{-6} \]
D. \[ 37 \times 10^{-7} \]

12. When simplified 
\[ (5x^3 + 2x^2 - 3x) + (-6x^3 + 2x^2 + 7x) \] is
A. \[ -x^3 + 2x^2 + 4x \]
B. \[ x^3 + 4x^2 + 10x \]
C. \[ x^3 + 4x^2 + 4x \]
D. \[ -x^3 + 4x^2 + 4x \]

13. When simplified 
\[ (-4x^2 - 6x + 2) - (3x^2 + 2x - 7) \] is
A. \[ -7x^2 - 4x + 9 \]
B. \[ -7x^2 - 8x + 9 \]
C. \[ x^2 - 4x - 5 \]
D. \[ x^2 - 8x + 9 \]

14. When simplified \( (4x^3)(-2x^3)^2 \) is
A. \[ 2x^{10} \]
B. \[ -8x^{10} \]
C. \[ 8x^{11} \]
D. \[ 16x^{11} \]

15. When simplified \( -3x^2(x^2 - 3x - 1) \) is
A. \( -3x^4 + 9x^3 + 3x^2 \)
B. \( -3x^4 - 3x - 1 \)
C. \( -3x^4 - 9x^3 - 3x^2 \)
D. \( -3x^2 - 9x + 3 \)

16. When simplified \( (3x - 1)(3x + 1) \) is
A. \[ 9x^2 + 1 \]
B. \[ 9x^2 - 6x - 1 \]
C. \[ 9x^2 - 1 \]
D. \[ 9x^2 + 6x - 1 \]

17. When simplified \( (x - 5)^2 \) is
A. \[ x^2 + 25 \]
B. \[ x^2 + 10x + 25 \]
C. \[ x^2 - 25 \]
D. \[ x^2 - 10x + 25 \]

18. \( \frac{8x^3 - 6x^2 - x + 5}{2x} \) is equivalent to
A. \[ 4x^2 - 3x - 2 + \frac{5x}{2} \]
B. \[ 4x^2 - 3x - \frac{1}{2} + \frac{5}{2x} \]
C. \[ 4x^2 - 6x + 4 \]
D. \[ 4x^2 - 7x + 5 \]

19. The only number in \( \left\{ -2.7, \ -\frac{5}{3}, \ 0, \ \frac{2}{3}, \ 4, \ \sqrt{48} \right\} \) that is irrational is
A. \( -\frac{5}{3} \)
B. \( 0.\overline{3} \)
C. \( 4 \)
D. \( \sqrt{48} \)

20. The greatest common factor of \( 4x^5 - 8x^4 + 12x^3 \) is
A. \( 4 \)
B. \( 4x \)
C. \( 4x^3 \)
D. \( 4x^5 \)
21. One of the factors of $x^2 - 5x + 6$ is
A. $(x + 3)$
B. $(x - 2)$
C. $(x - 1)$
D. $(x - 6)$

22. One of the factors of $6t^2 - 19t - 20$ is
A. $(t + 5)$
B. $(2t + 5)$
C. $(6t + 5)$
D. $(t + 1)$

23. The complete factorization of $16x^2 + 48x + 36$ is
A. $(8x + 12)(2x + 3)$
B. $4(2x + 3)^2$
C. $4(4x + 1)(x + 9)$
D. $(4x + 9)^2$

24. One of the factors of $16x^2 - 25$ is
A. $(2x - 2)$
B. $(8x - 5)$
C. $(16x - 25)$
D. $(4x + 5)$

25. One of the factors of $8x^3 + 27$ is
A. $(4x^2 - 6x + 9)$
B. $(4x^2 - 6x - 9)$
C. $(4x^2 + 6x + 9)$
D. $(2x^2 - 6x + 3)$

26. One of the factors of $x^2 + 2x - xy - 2y$ is
A. $(x - 2)$
B. $(2 - x)$
C. $(x - y)$
D. $x$

27. The solution set for $x^2 = 16$ is
A. $\{-4\}$
B. $\{4\}$
C. $\{16\}$
D. $\{-4, 4\}$

28. The solution set for $6x^2 + x = 2$ is
A. $\left\{-\frac{3}{2}, 2\right\}$
B. $\left\{-\frac{1}{2}, \frac{2}{3}\right\}$
C. $\left\{\frac{1}{2}, -\frac{3}{2}\right\}$
D. $\left\{-\frac{2}{3}, \frac{1}{2}\right\}$

29. $3(5x + 0) = 3(0 + 5x)$ is an example of the
A. Commutative Property
B. Associative Property
C. Distributive Property
D. Identity Property

30. The only phrase below which represents $x - y$ is
A. $x$ subtracted from $y$
B. $y$ less than $x$
C. $y$ minus $x$
D. $y$ decreased by $x$
31. If \(2x - 3y = 6\) is solved for \(y\), then \(y = \)  
A. \(\frac{3}{2}x - 3\)  
B. \(\frac{3}{2}x + 3\)  
C. \(\frac{2}{3}x - 2\)  
D. \(-\frac{2}{3}x + 2\)

32. The graph of \(6 - 3x \leq -3\) most closely resembles  
A.  
B.  
C.  
D.  

33. The solution for \(4x + 1 < 9x - 4\) in interval notation is  
A. \((-\infty, 1)\)  
B. \((-\infty, -1)\)  
C. \((1, \infty)\)  
D. \((-1, \infty)\)

34. \((-6, 10)\) is in quadrant  
A. I  
B. II  
C. III  
D. IV

35. \(-|3 - 7| = \)  
A. \(-10\)  
B. \(-4\)  
C. \(4\)  
D. \(10\)

36. The coordinates of point P are possibly  
A. \((1, -5)\)  
B. \((-5, 1)\)  
C. \((-5, -1)\)  
D. \((-1, -5)\)

37. The only ordered pair below that is a solution for \(3x + y = 8\) is  
A. \((2, 0)\)  
B. \((3, -1)\)  
C. \((0, 4)\)  
D. \((-2, 2)\)

38. The only equation below that could be the equation of this line is  
A. \(y = 3\)  
B. \(y = -3\)  
C. \(x = 3\)  
D. \(x = -3\)

39. The graph of \(2x - y = 6\) most closely resembles  
A.  
B.  
C.  
D.  

40. The supplement of an angle is 4 times the measure of the angle. Let \(x\) represent the angle measure. An equation that could be used to solve for \(x\) is  
A. \(180 - x = 4x\)  
B. \(180 + 4x = x\)  
C. \(90 - x = 4x\)  
D. \(90 + 4x = x\)
41. Litsu invested some money at 4% and
$3000 more than that at 5%. The two
investments produced a total of $600
in interest in 1 year. If \( x \) represents the
amount invested at 4%, then an
equation that could be used to
represent this problem is
A. \( .04(x + 3000) + .05x = 600 \)
B. \( .4(x + 3000) + .5x = 600 \)
C. \( .04x + .05(x + 3000) = 600 \)
D. \( .4x + .5(x + 3000) = 600 \)

42. The \( x \)-intercept of \( 4x - y = 8 \) is
A. \((0, -8)\)
B. \((0, 2)\)
C. \((2, 0)\)
D. \((-8, 0)\)

43. A rectangular box has a length of 10”, a
width of 5” and a height of 4”. The
volume of the box is
A. 19 in\(^2\)
B. 19 in\(^3\)
C. 200 in\(^2\)
D. 200 in\(^3\)

44. The length of a rectangle is 7 ft. longer
than the width, \( W \). The area of the
rectangle is 63 ft\(^2\). An equation that
could be used to find \( W \) is
A. \( 2W + 2(W + 7) = 63 \)
B. \( W + (W + 7) = 63 \)
C. \( W(W + 7) = 63 \)
D. \( W^2 + (W + 7)^2 = 63 \)

45. In the figure above, the measure of the
smaller angle is
A. 5.6°
B. 12°
C. 30°
D. 38°

46. A cashier has a total of 28 bills made
up of tens and twenties. The total
value of the money is $400. If \( x \)
represents the number of tens, then an
equation that represents this problem is
A. \( 10x + 20(28 - x) = 400 \)
B. \( 10(28 - x) + 20x = 400 \)
C. \( 10x + 20(x - 28) = 400 \)
D. \( 10(28 - x) + 20x = 400 \)

47. The value of \( x \) in the triangle below is
A. \( \sqrt{14} \) in.
B. 10 in.
C. 14 in.
D. 100 in.
Answers:

1. B
2. C
3. C
4. B
5. D
6. B
7. C
8. C
9. A
10. C
11. A
12. D
13. B
14. D
15. A
16. C
17. D
18. B
19. D
20. C
21. B
22. C
23. B
24. D
25. A
26. C
27. D
28. D
29. A
30. B
31. C
32. C
33. C
34. B
35. B
36. A
37. B
38. D
39. B
40. A
41. C
42. C
43. D
44. C
45. C
46. A
47. B