

# MIDDLESEX COUNTY COLLEGE

## MAT 013A FINAL REVIEW

1. Choose the correct symbol,  $>$ ,  $<$ , or  $=$ .  $-13$  \_\_\_  $-5$

[A]  $>$

[B]  $<$

[C]  $=$

2. Identify the set. The integers greater than  $-3$  and less than  $5$ .

[A]  $\{-2, -1, 0, 1, 2, 3, 4\}$

[B]  $\{-2, -1, 0, 1, 2, 3, 4, 5\}$

[C]  $\{-3, -2, -1, 0, 1, 2, 3, 4, 5\}$

[D]  $\{-3, -2, -1, 0, 1, 2, 3, 4\}$

3. Evaluate.  $|-45|$

[A]  $45$

[B]  $\frac{1}{45}$

[C]  $-\frac{1}{45}$

[D]  $-45$

4. Add.  $(-6) + 7 + (-3)$

[A]  $2$

[B]  $16$

[C]  $-10$

[D]  $-2$

5. Subtract.  $-17 - 4 - (-20) - 24$

[A]  $-25$

[B]  $-17$

[C]  $-23$

[D]  $65$

6. Multiply.  $(-3)(-10)$

[A]  $30$

[B]  $-30$

[C]  $13$

[D]  $-13$

7. Multiply.  $4(-1)(5)$

[A]  $10$

[B]  $20$

[C]  $-20$

[D]  $-10$

8. Divide.  $(-24) \div 6$

[A]  $-4$

[B]  $\frac{1}{4}$

[C]  $-\frac{1}{4}$

[D]  $4$

9. Aaron has \$170 in his savings account. He withdraws \$118, deposits \$42, and then withdraws \$85. Which shows the ending balance of his account?

[A] \$331

[B] \$9

[C]  $-\$9$

[D]  $-\$161$

10. Which shows  $\frac{1}{8}$  as a decimal?

[A]  $0.125$

[B]  $1.8$

[C]  $8$

[D]  $0.81$

11. Simplify.  $-\frac{11}{2} + \frac{13}{7} - \left(-\frac{14}{4}\right)$

[A]  $7\frac{5}{14}$

[B]  $-\frac{1}{7}$

[C]  $\frac{11}{13}$

[D]  $10\frac{6}{7}$

12. Simplify.  $\frac{16}{9} \times \left(-\frac{5}{2}\right)$

[A]  $-2\frac{13}{16}$

[B]  $\frac{11}{18}$

[C]  $-4\frac{4}{9}$

[D]  $-1\frac{1}{9}$

13. Solve.  $\frac{16}{3} \div \frac{8}{5}$

[A]  $1\frac{2}{3}$

[B]  $3\frac{1}{3}$

[C]  $1\frac{7}{8}$

[D]  $3$

14. Which shows 55% as a decimal?

[A]  $5.5$

[B]  $0.55$

[C]  $0.055$

[D]  $0.0055$

15. Evaluate.  $\left(\frac{7}{8}\right)^2 \cdot \left(\frac{1}{49}\right)$
- [A]  $\frac{49}{64}$                       [B]  $\frac{7}{392}$                       [C]  $\frac{1}{64}$                       [D]  $\frac{1}{16}$
16. Evaluate.  $(7 \cdot 5^2 - 7 \cdot 2^2) \div (4 + 3)$
- [A] 171                      [B] 147                      [C] 21                      [D] 72
17. Evaluate the expression for the given value of  $x$ .  $(-5 \cdot x)\left(\frac{3}{5}\right)$  for  $x = 4$
- [A] -12                      [B]  $-\frac{3}{4}$                       [C] -3                      [D]  $-\frac{1}{12}$
18. Evaluate the expression when  $x = 10$ :  $\frac{x^2 - 4}{8 - x^3}$
- [A]  $\frac{1}{8}$                       [B]  $-\frac{3}{31}$                       [C] -12                      [D] none of these
19. Simplify.  $8y + (-3) + x + (-5y) - (-2x)$
- [A]  $3y - 3x + 4$                       [B]  $3y + 3x - 3$                       [C]  $-3y - 4x + 4$                       [D]  $-3y - 3x + 3$
20. Simplify.  $(-9a)\left(-\frac{1}{3}\right)$
- [A]  $-\frac{1}{27a}$                       [B]  $3a$                       [C]  $\frac{1}{27a}$                       [D]  $-3a$
21. Simplify.  $\frac{2}{3}(12 - 9y)$
- [A]  $8 - 6y$                       [B]  $7 - 8y$                       [C]  $8 - 7y$                       [D]  $10 - 6y$

22. Simplify.  $8(x+9)-9(x-4)$

[A]  $17x+108$

[B]  $-x+108$

[C]  $-x+36$

[D]  $17x+36$

23. Simplify.  $-3[3x-4(3+x)]$

[A]  $3x+36$

[B]  $3x-21$

[C]  $x+36$

[D]  $x-21$

24. Translate into a variable expression. 58 minus the quotient of  $q$  and  $-2$

[A]  $\frac{58}{-2}-q$

[B]  $58-\frac{q}{-2}$

[C]  $\frac{58-q}{-2}$

[D]  $\frac{58-(-2)}{q}$

25. Translate into a variable expression. the difference between a number and twelve less than the number

[A]  $2x-12$

[B]  $x-(-x-12)$

[C]  $-x-12$

[D]  $x-(x-12)$

26. Simone has 3 fewer staples than Ramon. Simone has 37 staples. Which equation could be solved to find how many staples Ramon has?

[A]  $x+3=37$

[B]  $x+37=3$

[C]  $x+37=-3$

[D]  $x-3=37$

27. Solve.  $22=m+3$

[A] 19

[B] 25

[C] 66

[D] 21

28. Solve.  $26=-6y$

[A]  $-\frac{13}{3}$

[B]  $-32$

[C]  $\frac{13}{3}$

[D] 32

29. Solve.  $-\frac{4}{5}x=-8$

[A]  $-3\frac{1}{4}$

[B] 10

[C]  $\frac{1}{8}$

[D]  $2\frac{1}{2}$

30. Lisa correctly answered 28 questions on a 35 question science test. What percent did Lisa get correct?
- [A] 36%                      [B] 50%                      [C] 80%                      [D] 55%
31. Solve.  $-7x + 6 = 41$
- [A]  $-1$                       [B]  $-5$                       [C]  $8$                       [D]  $42$
32. Solve.  $-6 = 2(x - 8) - 4x$
- [A]  $5$                       [B]  $7$                       [C]  $-7$                       [D]  $-5$
33. Lawn ornaments may be rented at a rate determined by the formula  $C = 2.7n + 2.2$ , where  $C$  is the cost in dollars and  $n$  is the number of ornaments. Find the cost of renting 10 flamingo ornaments for a party.
- [A] \$24.80                      [B] \$27.00                      [C] \$29.20                      [D] \$32.94
34. Solve the formula for the given variable.  $P = 2a + 2b$  for  $b$
- [A]  $b = \frac{P-2}{2a}$                       [B]  $b = \frac{P-2a}{2}$                       [C]  $b = \frac{P}{2} - 2a$                       [D]  $b = \frac{P}{2a+2}$
35. Solve the formula for the given variable.  $M = \frac{mRT}{PV}$  for  $T$
- [A]  $T = \frac{mR}{MPV}$                       [B]  $T = \frac{mMR}{PV}$                       [C]  $T = \frac{MPV}{mR}$                       [D]  $T = MPV - mR$
36. Translate into an equation and solve. The product of ten and a number is negative fifty. Find the number.
- [A]  $10x = -50$ ;  $-5$                       [B]  $x - 10 = -50$ ;  $-5$                       [C]  $x + 10 = -50$ ;  $10$                       [D]  $\frac{x}{10} = -50$ ;  $10$
37. Marty is 24 years old, which is 6 more than 3 times Donald's age. Which equation could be used to solve for Donald's age? How old is Donald?
- [A]  $6x + 3 = 24$ ; 3.5 yr                      [B]  $3x + 6 = 24$ ; 6 yr  
[C]  $6x + 3 = 24$ ; 4.5 yr                      [D]  $3x - 6 = 24$ ; 10 yr

38. Find three consecutive odd integers such that four times the sum of the first and second is 17 more than 7 times the third.

[A] 31, 33, 35

[B] 39, 41, 43

[C] 37, 39, 41

[D] 47, 49, 51

39. A stamp collector has 7¢ stamps and 15¢ stamps. The number of 7¢ stamps is eight less than three times the number of 15¢ stamps. The total value of the stamps is \$1.24. Find the number of both types of stamps in the collection.

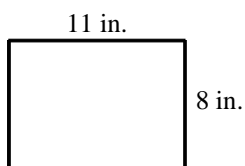
[A] 7¢ stamps: 5; 15¢ stamps: 7

[B] 7¢ stamps: 7; 15¢ stamps: 5

[C] 7¢ stamps: 7; 15¢ stamps: 4

[D] 7¢ stamps: 23; 15¢ stamps: 5

40. Find the perimeter of the rectangle.



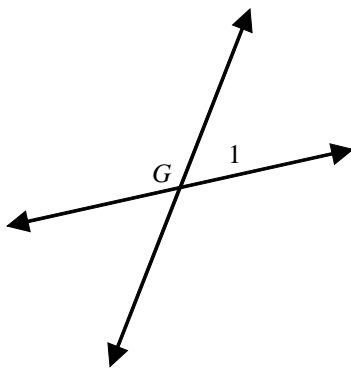
[A] 40 in.

[B] 38 in.

[C] 88 in.

[D] 19 in.

41. The measure of  $\angle 1$  is 60. Which is the measure of  $\angle G$ ?



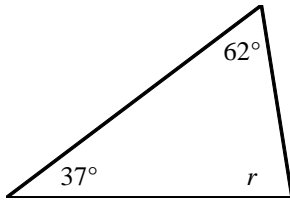
[A] 60

[B] 120

[C] 30

[D] 240

42. Find the measure of the missing angle in the given triangle.



[A] 9

[B] 189

[C] 99

[D] 81

43. Simplify.  $(-3x - 5x^3 + 3) + (9x^3 + 9 - 7x)$

[A]  $4x^3 - 10x - 6$

[B]  $6x^3 + 4x + 12$

[C]  $4x^3 - 10x + 12$

[D]  $6x^3 + 4x - 4$

44. Simplify.  $(-8x^2 + 2x) - (4x - 1 - 5x^2)$

[A]  $-12x^2 - 3x - 1$

[B]  $-3x^2 + 6x - 1$

[C]  $-13x^2 + 2x + 1$

[D]  $-3x^2 - 2x + 1$

45. Simplify.  $(6x^3y^2)(-8x^4y^4)$

[A]  $48x^7y^6$

[B]  $-48x^{12}y^8$

[C]  $48x^3y^4$

[D]  $-48x^7y^6$

46. Simplify.  $(-3s^4t^6u^2)^2$

[A]  $9s^6t^8u^4$

[B]  $-9s^8t^{12}u^4$

[C]  $9s^8t^{12}u^4$

[D]  $-9s^6t^8u^4$

47. Simplify.  $-5x(x^2 + 4x - 7)$

[A]  $-5x^2 + 20x^3 - 35x$

[B]  $-5x^3 - 20x^2 - 35x$

[C]  $-5x^3 + 20x^2 + 35x^2$

[D]  $-5x^3 - 20x^2 + 35x$

48. Simplify.  $(3x + 2y)(x^2 + 4xy - 5y^2)$

[A]  $3x^3 + 7x^3y^3 - 10y^3$

[B]  $3x^3 - 15xy^2 + 2x^2y - 10y^3$

[C] 0

[D]  $3x^3 + 14x^2y - 7xy^2 - 10y^3$

49. Simplify.  $(4c+5)(5c-6)$

- [A]  $20c^2 - 2c - 29$       [B]  $20c^2 + c - 29$       [C]  $20c^2 + c - 30$       [D]  $20c^2 - 49c - 30$

50. Simplify.  $(2x-5y)^2$

- [A]  $4x^2 - 6xy + 25y^2$       [B]  $4x^2 - 10xy + 25y^2$       [C]  $4x^2 - 20xy + 25y^2$       [D]  $4x^2 + 25y^2$

51. Simplify.  $(3x+4y)(3x-4y)$

- [A]  $9x^2 - 24x + 16y^2$       [B]  $9x^2 + 24x - 16y^2$       [C]  $9x^2 - 16y^2$       [D]  $9x^2 + 16y^2$

52. A rectangle has length  $x+3$  and width  $x-7$ . Find the area,  $A$ , of the rectangle in terms of  $x$ .

- [A]  $A = 2x - 4$       [B]  $A = x^2 + 10x - 21$       [C]  $A = 4x - 8$       [D]  $A = x^2 - 4x - 21$

53. Simplify.  $\frac{21x^4y^4}{-7x^2y^7}$

- [A]  $-\frac{3x^2}{y^3}$       [B]  $-\frac{3x^6}{y^{11}}$       [C]  $-\frac{x^2}{3y^3}$       [D]  $\frac{3x^2}{y^3}$

54. Express the number in scientific notation. 0.000000433

- [A]  $4.33 \times 10^8$       [B]  $4.33 \times 10^{-5}$       [C]  $433 \times 10^{-7}$       [D]  $4.33 \times 10^{-7}$

55. Simplify.  $\frac{12x^3y^3 + 15xy^2 + 3xy}{3xy}$

- [A]  $4x^2y^2 + 15xy^2 + 1$       [B]  $4x^2y^2 + 5y + xy$       [C]  $4x^2y^2 + 5y + 1$       [D]  $4x^2y^2 + 15xy^2 + 3xy$