Final Exam Review
DMAT 0097
Richland College

1. Evaluate the numerical expression: $\sqrt{6^2 - 4(1)(5)}$

A. -4 B. 4 C. 16 D. $\sqrt{56}$ E. None of these

2. Use your calculator to evaluate 12^6

A. 72 B. 144 C. 84 D. 2,985,984 E. 2,176,782,336

3. Use the Distributive Property to multiply:

k (4 – x)

A. 4k – x B. 4x – k C. k – 4x D. x – 4k E. 4k – kx

4. Use the Distributive Property to factor: 10x – 20

A. 10(x – 2) B. 5(2x – 4) C. 10(x – 20) D. 5(2x – 20) E. 10(10x – 2)

5. Determine the **sum**. (-50) + (-5)

A. -45 B. 45 C. -55 D. 55 E. -250

6. Use your calculator to find the sum: -0.35 + 78.3

A. 77.95 B. 75 C. 74.8 D. -77.95 E. -78.65

7. Add the rational numbers: $\frac{9}{5} + \frac{-3}{10} + \frac{1}{2}$

A. $\frac{23}{10}$ B. $\frac{7}{17}$ C. 2 D. $\frac{7}{10}$ E. $\frac{-23}{10}$

8. Find the sum of $\frac{8}{3}$ *and* $\frac{5}{12}$.

A. $\frac{10}{9}$ B. $\frac{13}{15}$ C. $\frac{37}{12}$ D. $\frac{3}{5}$ E. $\frac{1}{4}$

9. Perform the indicated operations: $-2-\sqrt{3^2-(-16)}$

A. -7 B. 5 C. -10 D. 10 E. -5

10. Perform the indicated operation: $\frac{7}{16}-\left(\frac{-5}{8}\right)$

A. $\frac{-3}{16}$ B. $\frac{17}{16}$ C. $\frac{3}{16}$ D. $\frac{-17}{16}$ E. $\frac{1}{2}$

11. Perform the indicated operation: (-1)(-1)(-4)(-1)(-3)

A. 12 B. -12 C. -10 D. 10 E. -36

12. Perform the indicated operations: $\frac{-3+\sqrt{(-3)^2-4(2)(-2)}}{2}$

A. -4 B. 4 C. -1 D. 1 E. 0

13. Perform the indicated operations: $-12\div[-6\div(-3)]$

A. 6 B. 2 C. -2 D. $\frac{-1}{3}$ E. -6

14. Divide: 86.47 ÷ (-4.47)

A. 19.34 B. -19.34 C. -19.35 D. -18.35 E. None of these

15. Simplify the expression: - (x + 3) + (4 + 2x)

A. –x + 1 B. –x – 1 C. x + 1 D. x – 1 E. 3x + 7

16. Combine the like terms to simplify the expression: ab + 3ac – 2ab + 5ac

A. 8ac – ab B. ab + 8ac C. -3ab + 8bc D. ab – 8ac E. None of these

17. In which quadrant does the point (-3, 5) lie?

A. QI B. QII C. Q III D. QIV E. x-axis

18. In which possible quadrant(s) could the point lie? The coordinates of the point are described as: "The second coordinate is negative".

A. QI or QII B. QII or QIII C. QIII or QIV D. QI or QIII E. QII or QIV

19. Evaluate the expression: $x^2 + 4x - 2$ for x = -4

A. 30 B. 2 C. -30 D. 5 E. -2

20. Evaluate the expression: $\frac{2x-4}{x+2}$ for x = -4

A. -6 B. 4 C. -4 D. 6 E. 2

21. Solve the equation for x: $15 - 0.3x = 19.2$

A. -14 B. 1.4 C. -1.4 D. -13 E. 114

22. Solve the equation: $-7x - 5 = 6 - 8x$

A. $\frac{11}{15}$ B. 11 C. 1 D. -11 E. -1

23. Solve: $12x - x = 7 + 10x - 5x + 8$

A. $\frac{-2}{5}$ B. $\frac{2}{5}$ C. $\frac{-5}{2}$ D. $\frac{5}{2}$ E. -2

24. Solve: $\frac{1}{2}(x+1) + \frac{x}{4} = \frac{-1}{2}$

A. $\frac{-4}{3}$ B. -4 C. 4 D. $\frac{-3}{4}$ E. All real numbers

25. Solve: $6(x + 1) + 1 = 2(3x - 1)$

A. Infinitely many solutions B. No Solution C. 9 D. 5 E. 2

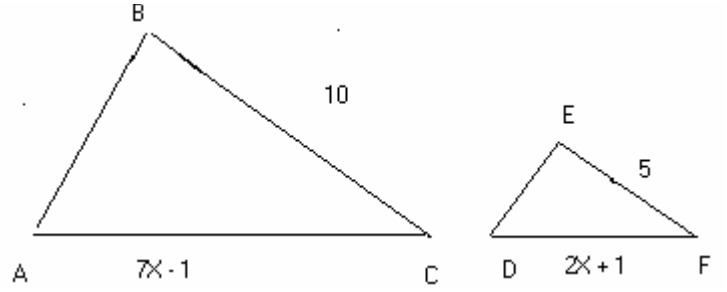
26. Solve: $5x + 1 - 3x = -5 + 2x + 6$

A. Infinitely many solutions B. No Solution C. $\frac{1}{2}$ D. 2 E. -1

27. Write a ratio that represents a comparison of the given quantities: **15 minutes to two hours**.

A. $\frac{1}{8}$ B. $\frac{15}{2}$ C. $\frac{5}{20}$ D. $\frac{8}{1}$ E. None

28. Given $\cap ABC$ is similar to $\cap DEF$. What is the value of DF?



A. 1 B. 6 C. 3 D. 5 E. 4

29. What is the percent increase from 10 to 14?

A. 28.6% B. 10% C. 4% D. 40% E. 25%

30. The formula for converting Centigrade (Celsius) to Fahrenheit is: $F = \frac{9}{5}C + 32$

If the Centigrade (Celsius) temperature is 15º, then what is corresponding Fahrenheit Temperature?

A. 37º B. 59º C. 15º D. 72º E. -7º

31. A piece of rope 18 feet long is cut into two pieces. If the length of one piece is x feet, what is a representation of other piece of rope?

A. $x - 18$ B. $2x$ C. $18x$ D. $18 - x$ E. $x + 18$

32. The sum of three consecutive odd integers is 369. What is the largest of these three numbers?

A. 129 B. 137 C. 125 D. 145 E. 151

33. The first angle of a triangle is 10º less than the second angle. The third angle is three times the second angle. What is the measure of the second angle?

A. 38º B. 45º C. 54º D. 84º E. 104º

34. Mr. Jones has a total of $5,000 to invest in two separate accounts. The savings account pays 3% simple interest and the mutual fund pays 5% interest. How much should he invest in the savings account in order to earn a total of $190 in interest for one year?

A. $2,500 B. $1,000 C. $2,000 D. $3,000 E. $1,500

35. Two cars leave from the same point, headed in opposite directions. Car A is traveling 50 mph and Car B is traveling at 60 mph. In how many hours will the two cars be 440 miles apart?

A. 2 hours B. 3 hours C. 2.5 hours D. 4 hours E. 3.5 hours

36. Two angles are complementary. One angle is 10º less than four times the other angle. What is the measure of the smaller angle?

A. 10º B. 20º C. 18º D. 15º E. 60º

37. The length of a rectangle is one foot more than twice the width. If the perimeter of the rectangle is 92 feet, what is the width of the rectangle?

A. 15 ft. B. 30 ft. C. 62 ft. D. 10 ft. E. 18 ft.

38. In which quadrant or axis does the point (-5, -1) lie?

A. QI B. Q II C. Q III D. Q IV E. x-axis

39. What is the slope of the line whose equation is $3x - 2y = 6$?

A. $m = \frac{2}{3}$ B. $m = \frac{3}{2}$ C. $m = 3$ D. $m = \frac{-3}{2}$ E. $m = \frac{-2}{3}$

40. Determine the intercepts of the graph of the equation $3x - 2y = 6$.

A. x-intercept: (0, 2) ; y-intercept: (3, 0)
B. x-intercept: (0, -3) ; y-intercept: (2, 0)
C. x-intercept: (-3, 0) ; y-intercept: (0, 2)
D. x-intercept: (2, 0) ; y-intercept: (0, -3)
A. x-intercept: (3, 0) ; y-intercept: (0, -2)

41. Which of the following points lies on the graph of the equation -3x + 2y = 6 ?

A. (1, 3) B. (2, 0) C. (0, -3) D. (2 , 2) E. (-6, -6)

42. Write the equation 3x – 4y = 12 in slope-intercept form (y = mx + b) and determine the slope and y-intercept.

A. $m = \frac{3}{4}; \quad (0,-3)$ B. $m = \frac{4}{3}; \quad (0,3)$ C. $m = \frac{-3}{4}; \quad (0,-3)$

D. $m = 3; \quad \left(0, \frac{3}{4}\right)$ E. $m = \frac{3}{4}; \quad (3,0)$

43. Use the substitution method to solve the following system of equations.

$2x = 3y$
$y = 2x + 4$

A. (2, 3) B. (1, -4) C. (3,2) D. (-3, 0) E. (-3, -2)

44. Solve by the addition method.

$3x – 2y = 9$
$x + 4y = -11$

A. (1, -3) B. $\left(0, \frac{-9}{2}\right)$ C. (-1, 3) D. No Solution E. Infinitely many solutions

45. The perimeter of a rectangle is 80 inches. The length is three times the width. What is one of the dimenstions?

A. The length is 20 inches B. The length is 30 inches C. The width is 15 inches

D. The width is 20 inches E. The length is 10 inches

46. Simplify: $\left(3x^2y\right)^2 \cdot \left(5xy^3\right)$

A. $15x^5y^4$ B. $45x^4y^4$ C. $15x^5y^5$ D. $30x^5y^5$ E. $45x^5y^5$

47. Simplify: $\left(\frac{3b^2}{5a^4}\right)^2$

A. $\frac{9b^4}{25a^6}$ B. $\frac{9b^4}{25a^8}$ C. $\frac{6b^4}{10b^8}$ D. $\frac{9b^4}{25a^4}$ E. $\frac{6b^4}{25a^8}$

48. If f(x) = -6 + 5x, what is f(-4)?

A. -26 B. 24 C. 20 D. -10 E. 14

49. If F(x) = $\frac{x+1}{x-1}$, then f(-1) =

A. 2 B. -2 C. 0 D. $\frac{1}{2}$ E. Undefined

50. Determine the product: $(2x - 5)^2$

A. $4x^2 + 25$ B. $4x^2 - 25$ C. $4x^2 + 10$ D. $4x^2 - 20x + 25$ E. $4x - 10$

51. Perform the indicated operation: $(3x^3 - 5x^2 + 2x - 1) + (x^2 - x - 5)$

A. $3x^3 + 4x^2 + x + 6$ B. $3x^3 - 4x^2 - x - 6$ C. $3x^3 - 4x^2 + x - 6$

D. $3x^3 - 6x^2 + 3x - 4$ E. $3x^3 + 6x^2 - 3x + 4$

52. Perform the indicated operation: $(3x^2 - 5x - 6) - (5x^2 + 3x - 1)$

A. $-2x^2 - 8x - 5$ B. $-2x^2 + 8x + 5$ C. $8x^2 + 8x + 5$

D. $2x^2 - 8x - 5$ E. $-2x^2 - 2x - 7$

53. Determine the quotient Q and the remainder R . $\frac{2x^3 - x^2 + 9}{2x + 3}$

A. Q: $x^2 - 2x - 3$; R: 1
B. Q: $x^2 - 2x + 3$; R: 0
C. Q: $x^2 + x + 3$; R: 0
D. Q: $2x^2 + 2x - 3$; R: 1
E. Q: $x^2 + 2x - 3$; R:0

54. Evaluate: $5^{-1} \cdot 6^2$

A. -30 B. 180 C. $\frac{5}{12}$ D. $\frac{36}{5}$ E. $\frac{12}{5}$

55. Factor: $3x(x - 5) + (x - 5)$

A. $3x(x - 5)$ B. $(x - 5)(3x + 1)$ C. $(3x - 1)(x - 5)$ D. $(x + 1)(x - 5)$ E. $x(3x + 1)$

56. When factored completely, one of the factors of $16x^4 - 25$ is:

A. $4x^2 - 5$ B. $4x - 5$ C. $4x + 5$ D. $4x + 25$ E. Prime

57. When $x^2 - x - 30$ is factored completely, what is one of the factors?

A. $x + 6$ B. $x - 5$ C. $x - 6$ D. $x - 10$ E. $x + 3$

58. When $3x^2 - 3x - 18$ is factored completely, one of the factors is:

A. $3x$ B. $x + 3$ C. $x - 2$ D. $x - 6$ E. $x + 2$

59. Factor completely: $x^4 - 1$

A. $(x^2 + 1)^2$ B. $(x^2 - 1)^2$ C. $(x^2 + 1)(x^2 - 1)$ D. $(x^2 + 1)(x + 1)(x - 1)$ E. Prime

60. When factored completely, what is the G.C.F. (Greatest Common Factor) of the polynomial:
$12x^3 - 6x^2 + 4x$

A. $2x^2$ B. $2x$ C. $4x$ D. $6x$ E. x

61. When factored completely, one of the factors of $4x^2 + 9$ is:

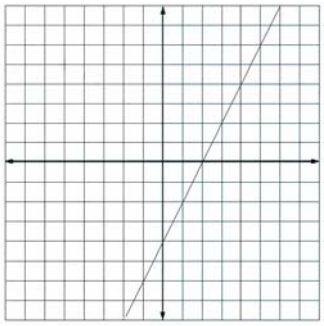
A. $2x + 3$ B. $2x - 3$ C. $x + 3$ D. $x - 3$ E. Prime

62. Evaluate: $(2 + 3)^{-2}$

A. -10 B. 25 C. $\frac{1}{25}$ D. $\frac{1}{5}$ E. $\frac{13}{36}$

63. Graph the linear equation: $2x - y = 4$.

A



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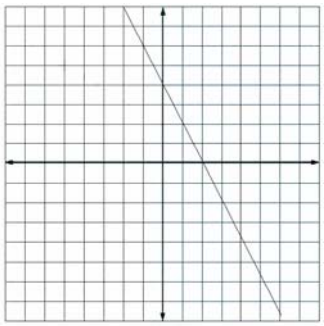

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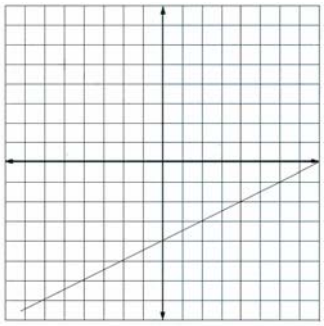

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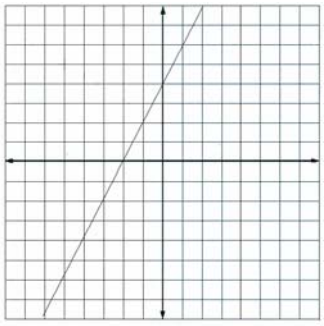
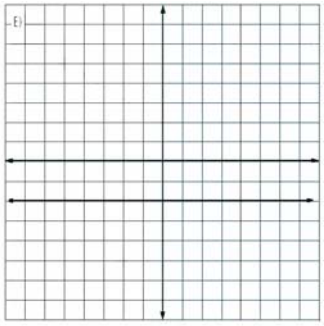
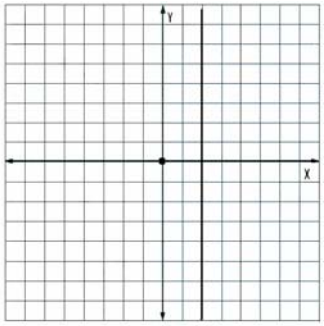


E



64. Graph the linear equation: $y + 3 = 5$

A



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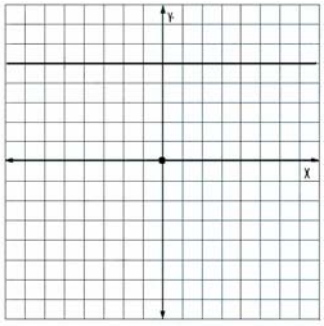

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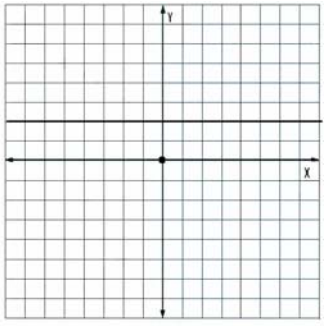

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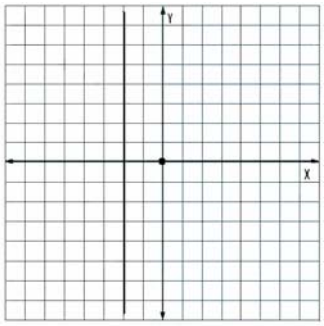
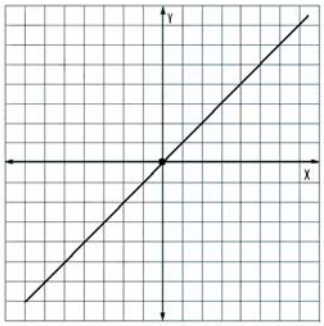
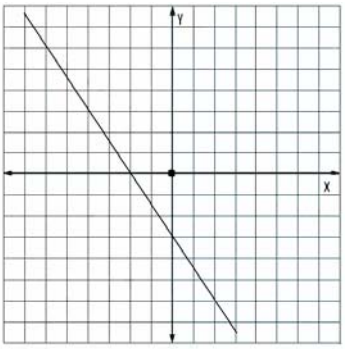


E



65. Graph the linear equation by finding and plotting intercepts: $3x - 2y = 6$

A



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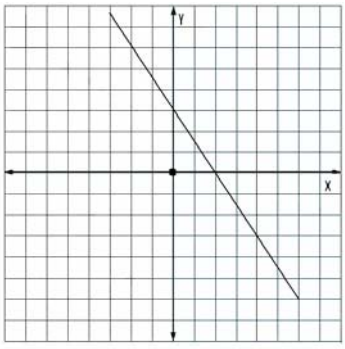

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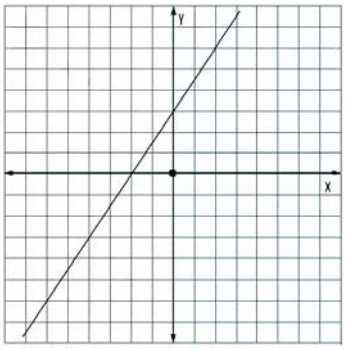
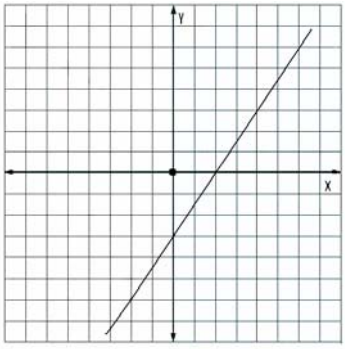


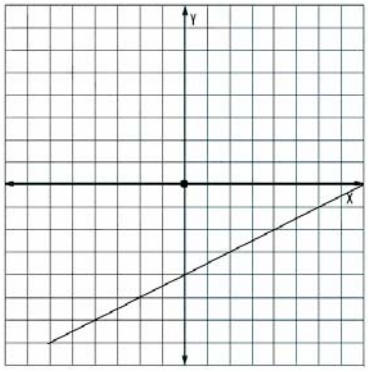
D



E (None of These)

66. Graph the linear equation: $y = \frac{1}{2}x - 4$

A



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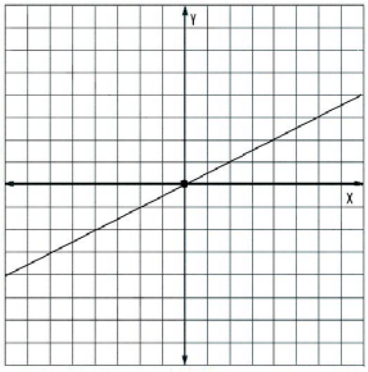

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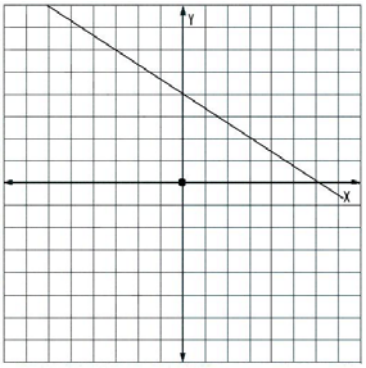

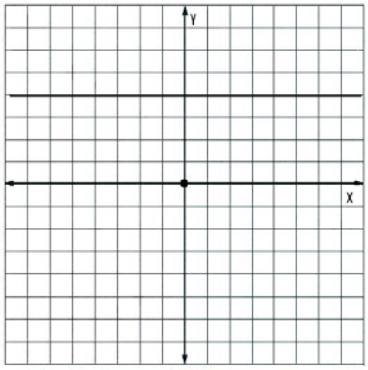

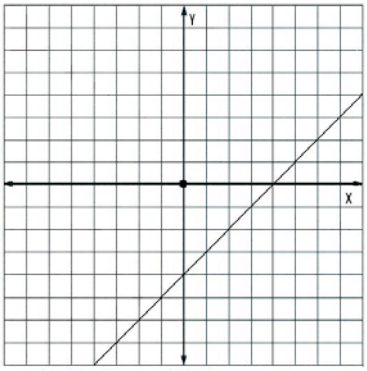

DMAT 0097 Final Exam Review

Answer Key

Prob. Number	Answer	Prob.Number	Answer	Prob. Number	Answer
1	B	21	A	41	E
2	D	22	B	42	A
3	E	23	D	43	E
4	A	24	A	44	A
5	C	25	B	45	B
6	A	26	A	46	E
7	C	27	A	47	B
8	C	28	C	48	A
9	A	29	D	49	C
10	B	30	B	50	D
11	B	31	D	51	C
12	D	32	C	52	A
13	E	33	A	53	B
14	B	34	D	54	D
15	C	35	D	55	B
16	A	36	B	56	A
17	B	37	A	57	C
18	C	38	C	58	E
19	E	39	B	59	D
20	D	40	D	60	B
				61	E
				62	C
				63	A
				64	C
				65	D
				66	A

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