Sample Practice Math 115 Final B VERSION 1 TEST# 50

DO NOT WRITE ON THE EXAM.

1. Evaluate $3^2(2)^3(-4)$.

   a) -288 b) -144 c) 288 d) -24

2. Simplify: $35 \div (11 - 4^2) - 2^3$

   a) -15 b) 1 c) -1 d) 15

3. Evaluate $(a + b)^2 - 3ac$ when $a = -2$, $b = -4$, and $c = 5$.

   a) 6 b) -6 c) -330 d) 66

4. Evaluate $-3b^2 \div (ac) - cb$ when $a = -2$, $b = 4$, and $c = -3$.

   a) 8 b) -4 c) $\frac{8}{2}$ d) 4

5. Simplify: $-4x + 6y - (-2x) - 5y$

   a) $2x - y$ b) $-2x + y$ c) $-2x + 11y$ d) $6x - y$

6. Translate and simplify "five more than a number added to the difference between the number and twelve."

   a) $2n - 17$ b) $2n - 7$ c) $n - 7$ d) -7

7. Simplify: $-3x + 4[x - (3x - 2)] + 5x$

   a) $16x + 8$ b) $11x + 8$ c) $-6x + 8$ d) $-6x - 8$

8. 36 is what percent of 45?

   a) 0.8% b) 800% c) 80% d) 8%

9. Solve: $3x - 10(x - 1) = 2(3x + 4) - 11$

   a) 1 b) 2 c) -1 d) -2

10. Solve: $2(x - 6) < 3(x - 2)$

    a) $x < 6$ b) $x > -6$ c) $x < -6$ d) $x > 6$

11. A board 15 ft long is cut into two pieces. Three times the length of the shorter piece is 5 ft more than twice the length of the longer piece. Find the length of the shorter piece.

    a) 7 b) 9 c) 8 d) 6

12. Find two consecutive even integers such that five times the first equals ten more then three times the second.

a) 12 and 14 b) 10 and 12 c) 8 and 10 d) 4 and 6

13. A total of $8000 is invested into two simple interest accounts. On one account the annual simple interest rate is 9%; on the second account the annual simple interest rate is 7%. How much should be invested in the 7% account so that the total interest earned is 8.5% of the total investment?

a) $5400 b) $2000 c) $6000 d) $1600

14. How many grams of pure acid must be added to 60 g of a 20% acid solution to make a solution that is 50% acid?

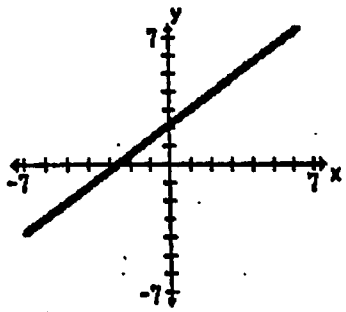
a) 12 g b) 50 g c) 60 g d) 36 g

15. The perimeter of a rectangle is 44 m. The length of the rectangle is 2 m less than three times the width. Find the length of the rectangle.

a) 5 m b) 12 m c) 16 m d) 8 m

16. Graph $y = \frac{3}{4}x - 2$

a)



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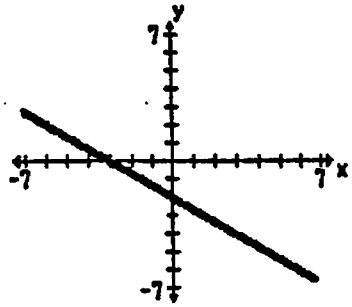

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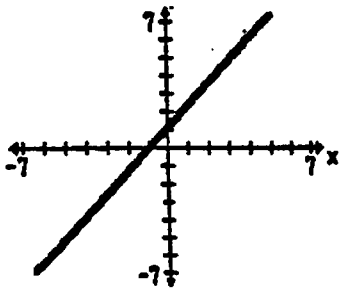

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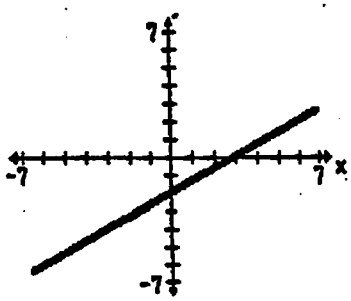


17. Find the slope of the line containing the points whose coordinates are (0, -3) and (4, 3).

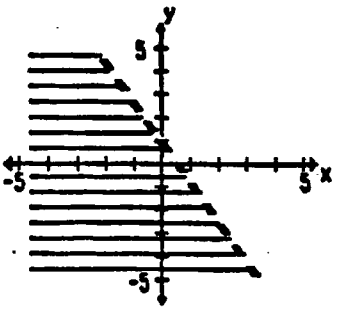
a) $\frac{2}{3}$ b) $\frac{3}{2}$ c) 0 d) $-\frac{3}{2}$

18. Find the equation of the line that contains the point whose coordinates are (1, -5) and has slope 3.

a) y = 3x - 1
b) y = 3x + 8
c) y = 3x - 8
d) y = 3x + 2

19. Graph the solution set of 3x + 2y > 2.

a)



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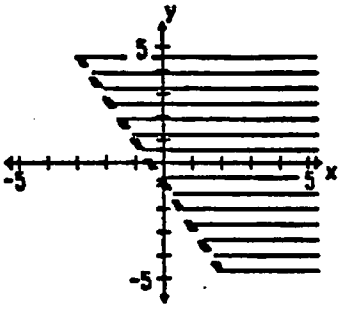

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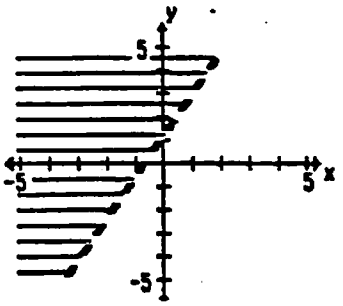

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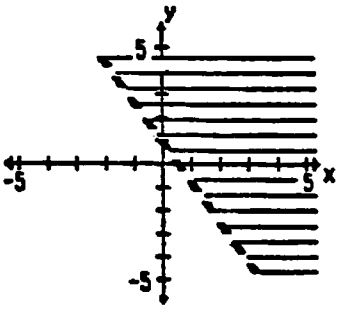


20. Which ordered pair [(4, -5), (-2, 1), (1, -2), or (2, -1)] is a solution of the following system?

3x - 4y = -10
2x + 2y = -2

a) (4, -5) b) (1, -2) c) (2, -1) d) (-2, 1)

21. Solve by the addition method:

4x - 3y = -2
-3x + 6y = -6

a) (-2, 3) b) (-2, -2) c) (2, 2) d) (-2, 0).

22. Subtract: $(-2x^2 + 3x - 6) - (x^2 - 5x + 2)$

a) $-x^2 - 2x - 4$ b) $-x^2 - 8x - 4$

c) $-3x^2 + 8x - 8$ d) $-3x^2 - 8x + 8$

23. Simplify: $(-3a)(a^2b)^3$

a) $-3a^6b^3$ b) $-3a^7b^3$ c) $3a^7b^3$ d) $-3a^3b^3$

24. Multiply: $x^3(2x^2 + 3x + 1)$

a) $2x^5 + 3x^4 - x^3$ b) $2x^5 + 3x^4 + x^3$

c) $2x^5 - 3x^3 - x^2$ d) $2x^6 + 3x^4 + x^3$

25. Simplify: $(5x^{-3}y^3)(2x^{-4}y^4)$

a) $10xy^3$ b) $\frac{10y^7}{x^7}$ c) $-10x^7y^7$ d) $-\frac{10y^7}{x^7}$

26. Divide: $(a^2 + 3a + 10) \div (a + 5)$

a) $a - 2$ b) $a + 2$

c) $a - 2 + \frac{20}{a + 5}$ d) $a - 2 - \frac{20}{a + 5}$

27. Solve: $(y - 6)(y + 1) = -12$

a) 2 and - 3 b) 2 and 3

c) 6 and -1 d) -2 and 3

28. The length of a rectangle is 3 in. more than the width. The area is 180 in^2. Find the length of the rectangle.

a) 18 in. b) 12 in. c) 15 in. d) 13 in.

29. Multiply: $\frac{x^2 - 3x - 10}{x^2 - 5x} \cdot \frac{x + 2}{x^2 - 4}$

a) $\frac{x - 2}{x(x + 2)}$ b) $\frac{x - 2}{x + 2}$

c) $\frac{x - 5}{x(x + 2)}$ d) $\frac{x + 2}{x(x - 2)}$

30. Divide: $\dfrac{x^2 - 5x - 14}{x^2 - 9x + 14} \div \dfrac{x^2 + 6x + 8}{x^2 + 2x - 8}$

a) $\dfrac{x + 2}{x + 4}$ b) 1 c) $\dfrac{x - 2}{x - 7}$ d) $\dfrac{x - 7}{x + 2}$

31. Subtract: $\dfrac{3a + 12}{a^2 + a - 12} - \dfrac{2}{a - 3}$

a) $\dfrac{1}{a - 3}$ b) $\dfrac{5}{a + 4}$

c) $\dfrac{5}{a - 3}$ d) $\dfrac{3a^2 + 8a - 2}{a^2 + a - 12}$

32. Simplify: $\dfrac{1 + \dfrac{4}{y}}{1 - \dfrac{16}{y^2}}$

a) $\dfrac{y}{y - 4}$ b) $\dfrac{y - 4}{y}$

c) $\dfrac{y + 4}{y}$ d) $\dfrac{y}{y + 4}$

33. Solve: $\dfrac{4}{5x - 4} = -2 + \dfrac{6}{5x - 4}$

a) -1 b) 0 c) $\dfrac{9}{5}$ d) 1

34. One water pipe can fill a tank in 10 min, whereas a second pipe can fill the tank in 15 min. How long would it take to fill the tank if both pipes were working?

a) 18 min b) 6 min c) 9 min d) 12 min

35. Simplify: $3\sqrt{27x^4y^{16}}$

a) $3x^2y^4\sqrt{3}$ b) $3xy\sqrt{3}$ c) $9x^2y^8\sqrt{3}$ d) $9x^2y\sqrt{3}$

36. Simplify: $\sqrt{2x^2y^4} + xy\sqrt{18y^2} - y\sqrt{50x^2y^2}$

a) $-y^2\sqrt{2x}$ b) $-x\sqrt{2}$ c) $-xy^2\sqrt{2}$ d) $xy\sqrt{2}$

37. Divide: $\dfrac{\sqrt{x}}{\sqrt{x}+\sqrt{y}}$

a) $\dfrac{x-\sqrt{xy}}{x+y}$

b) $\dfrac{x-\sqrt{xy}}{x-y}$

c) $\dfrac{\sqrt{x}+\sqrt{xy}}{x+y}$

d) $\dfrac{x+\sqrt{xy}}{x-y}$

38. Solve: $\sqrt{3x+1}-10=0$

a) 33 b) 30 c) 3 d) -33

39. Solve by using the quadratic formula: $2y^2+5y+1=0$

a) $\dfrac{-5+\sqrt{17}}{2}$ and $\dfrac{-5-\sqrt{17}}{2}$

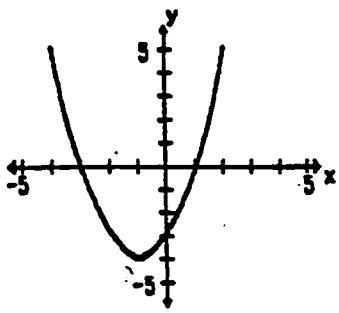
b) $\dfrac{5+\sqrt{17}}{4}$ and $\dfrac{5-\sqrt{17}}{4}$

c) $\dfrac{5+\sqrt{17}}{2}$ and $\dfrac{5-\sqrt{17}}{2}$

d) $\dfrac{-5+\sqrt{17}}{4}$ and $\dfrac{-5-\sqrt{17}}{4}$

40. Graph $y=x^2+2x-3$.

a)



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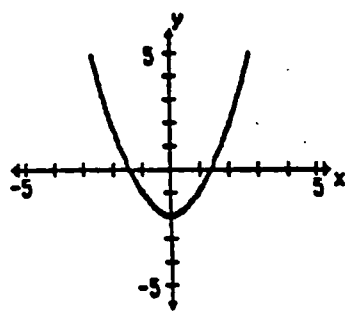

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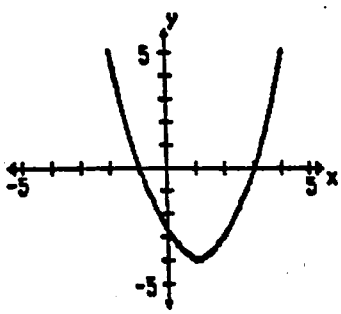

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