

West Los Angeles College	Department of Mathematics
Math 115/118 Final	Fall 2013
Version # 1	

DO NOT WRITE ON THE TEST

- Evaluate: $\left(-\frac{3}{4}\right)^2\left(-\frac{1}{6}\right)$
 A) $\frac{3}{32}$ B) $-\frac{3}{32}$ C) $-\frac{1}{32}$ D) $\frac{1}{32}$
- Evaluate: $\frac{-25-7}{4^2-8} \div (3-5)$
 A) 2 B) -2 C) -5 D) 5
- Sixteen out of 25 members of a campus club are in favor of their new T-shirt design. What percentage of the members is in favor of the new design?
 A) 64% B) 41% C) 40% D) 0.64%
- Simplify: $5x - 3(2x + 7)$
 A) $x - 21$ B) $-x - 7$ C) $-x - 21$ D) $-x + 21$
- Translate "eight less than the product of a number and four" into a variable expression.
 A) $4x - 8$ B) $8 - x + 4$ C) $8 - 4x$ D) $x + 4 - 8$
- Evaluate $2x^2 + 3y$ when $x = -3$ and $y = 2$
 A) 42 B) 24 C) -12 D) -30
- Solve: $5x - (8x - 7) = 10$
 A) $\frac{17}{3}$ B) -1 C) $-\frac{17}{3}$ D) 1
- Solve: $-\frac{8}{15}x = 16$
 A) $-\frac{128}{15}$ B) -30 C) 30 D) $\frac{128}{15}$
- Solve: $3(3 - x) < 5(x + 5)$
 A) $x > -2$ B) $x > 2$ C) $x < -2$ D) $x < 2$
- A bank contains 25 coins in nickels and dimes. The coins have a total value of \$1.65. Find the number of dimes in the bank.
 A) 8 dimes B) 15 dimes C) 17 dimes D) 11 dimes
- The perimeter of a rectangle is 36 ft. The width is 4 ft less than the length. Find the width of the rectangle.
 A) 7 ft B) 8 ft C) 11 ft D) 12 ft

12. A book that regularly sells for \$50 is on sale for \$40. Find the discount rate.

- A) 25% B) 20% C) 10% D) 80%

13. An investment of \$3000 is made at an annual simple interest rate of 9%. How much of a second investment must be made at an annual simple interest rate of 10% so that the total interest earned is \$520?

- A) \$3500 B) \$2200 C) \$2500 D) \$2750

14. A pharmacist mixes 2 L of a solution that is 60% acid with a 3 L of a solution that is 20% acid. Find the concentration of acid in the resulting mixture.

- A) 80% B) 36% C) 40% D) 12%

15. A motorist left a city for a 295 mile, 7-hour trip. For the first part of the trip, the average speed was 40 mph. For the remainder of the trip, the average speed was 55 mph. How long did the motorist drive at 55 mph?

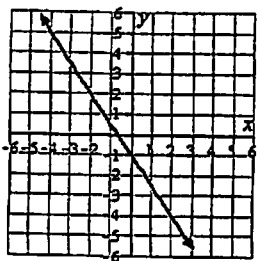
- A) 3.5 hours B) 2 hours C) 6 hours D) 1 hour

16. Find the slope of the line that contains the points $(-2, -6)$ and $(7, -3)$

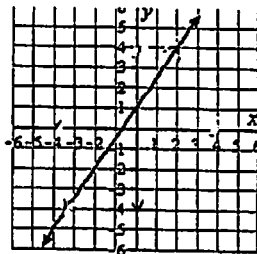
- A) -3 B) $-\frac{1}{3}$ C) $\frac{1}{3}$ D) 3

17. Graph: $y = \frac{2}{3}x - 1$

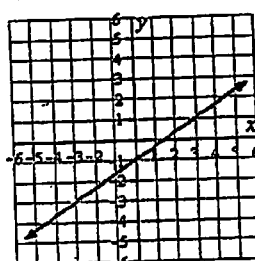
A)



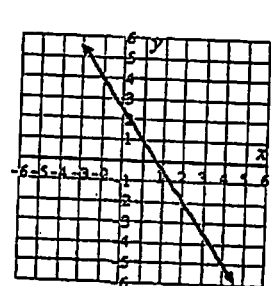
B)



C)

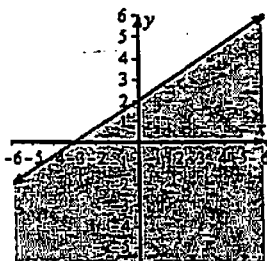


D)

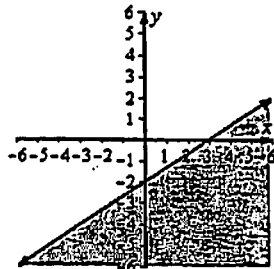


18. Graph the solution set: $2x - 3y \geq 6$

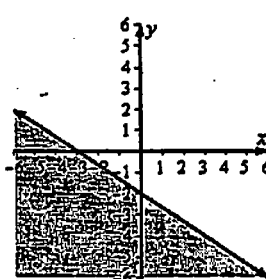
A)



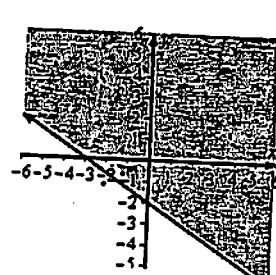
B)



C)



D)



19. Solving the system $y = x - 9$
 $2x + 5y = 10$
 gives A) $x = \frac{55}{7}$ B) $x = -4$ C) $x = -2$ D) $x = -\frac{8}{7}$
20. Solving the system $3x + 9y = 13$
 $3x + 18y = 17$
 gives A) $y = 3$ B) $y = \frac{4}{9}$ C) $y = -\frac{4}{9}$ D) $y = -3$
21. With the current, a boat can travel 75 mi in 3 h. Against the current, the boat travels 33 mi in 3 h. Find the rate of the current.
 A) 21 mph B) 8 mph C) 7 mph D) 18 mph
22. Multiply: $(2x + 3)(-x^2 + 4x - 3)$
 A) $-2x^3 + 11x^2 - 18x - 9$ B) $-2x^3 + 11x^2 + 18x - 9$ C) $-2x^3 + 8x - 9$ D) $-2x^3 + 5x^2 + 6x - 9$
23. Divide: $(x^2 - 2x - 5) \div (x + 3)$
 A) $x - 1 + \frac{22}{x + 3}$ B) $x - 5 + \frac{40}{x + 3}$ C) $x - 5$ D) $x - 5 + \frac{10}{x + 3}$
24. Simplify: $(-5u^3)(u^{-3})^2$
 A) $-\frac{5}{u^2}$ B) $-\frac{1}{5u^4}$ C) $-\frac{5}{u}$ D) $-\frac{5}{u^3}$
25. Factor completely: $ax - 3bx - ay + 3by$
 A) $(x + y)(a - 3b)$ B) $(x + 3y)(a - b)$ C) $(x - y)(a - 3b)$ D) $(x - y)(a + 3b)$
26. Factor completely: $8a^2 + 26a - 7$
 A) $(2a + 7)(4a - 1)$ B) $(4a + 1)(2a - 7)$ C) $(8a - 7)(a + 1)$ D) $(2a + 1)(4a - 7)$
27. Factor completely: $6c^2 - 24$
 A) $6(c + 2)(c - 2)$ B) $6(c - 2)^2$ C) $6(c + 2)^2$ D) $6(2 + c)(2 - c)$
28. Solve: $x(x + 5) = 14$
 A) -1, 14 B) 1, -14 C) 7, -2 D) -7, 2
29. Divide: $\frac{7x - 7}{4x + 8} \div \frac{x^2 - 2x + 1}{x^2 - 4}$
 A) $\frac{7(x - 2)}{4(x + 1)}$ B) $\frac{7(x + 2)}{4(x - 1)}$ C) $\frac{7(x - 2)}{4(x - 1)}$ D) $\frac{7(x - 1)}{4(x + 2)}$
30. Solve $T = fm + gm$ for g
 A) $g = \frac{T - fm}{m}$ B) $g = \frac{fm - T}{m}$ C) $g = \frac{m}{T - fm}$ D) $g = \frac{m}{fm - T}$

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

- A) $\frac{x-1}{x+1}$ B) $\frac{x-4}{x+2}$ C) $\frac{x+2}{x-4}$ D) 2

32. Add: $\frac{r}{r^2-9} + \frac{3}{r-3}$

- A) $\frac{4r+9}{(3-r)(r+3)}$ B) $\frac{-4r+9}{(r-3)(r+3)}$ C) $\frac{4r-9}{(r-3)(r+3)}$ D) $\frac{4r+9}{(r-3)(r+3)}$

33. Solve: $y + \frac{2y-2}{y-1} = 2$

- A) 0 and 1 B) 1 C) No solution D) 0

34. A pool can be filled by one pipe in 10 h, whereas a second pipe requires 15 h to fill the pool. How long would it take to fill the pool with both pipes turned on?

- A) 9 h B) 12.5 h C) 6 h D) 7 h

35. Simplify: $\sqrt{36x^4y^7}$

- A) $6x^2y^3$ B) $3x^2y^2\sqrt{y}$ C) $6x^2y^3\sqrt{y}$ D) $6x^2y^3\sqrt{y}$

36. Simplify: $\frac{\sqrt{125x^3}}{\sqrt{5x^9}}$

- A) $\frac{5}{x^6}$ B) $\frac{5}{x^3}$ C) $\frac{25}{x^6}$ D) $\frac{25}{x^3}$

37. Solve: $\sqrt{4x+7} = 5$

- A) 8 B) $\frac{9}{2}$ C) 3 D) No solution

38. Solve: $x^2 + 6x + 4 = 0$

- A) $-3-2\sqrt{13}, -3+2\sqrt{13}$ B) $-3-\sqrt{13}, -3+\sqrt{13}$ C) $-3-\sqrt{5}, -3+\sqrt{5}$ D) $-3-2\sqrt{5}, -3+2\sqrt{5}$

39. Solve: $(x-1)^2 = 9$

- A) -3, 6 B) -10, 8 C) 2, -4 D) 4, -2

40. Graph $y = -x^2 + 3x + 1$

A)

B)

C)

D)

