

West Los Angeles College	Department of Mathematics	Spring 2013
Math 115/118 Final	<i>Do not write on exam</i>	VERSION 1

- Evaluate: $\left(-\frac{3}{4}\right)^2\left(-\frac{1}{6}\right)$
A) $\frac{1}{32}$ B) $-\frac{3}{32}$ C) $-\frac{3}{8}$ D) $\frac{3}{8}$
- Evaluate: $\frac{-9-7}{5^2-17} + (3-5)$
A) 1 B) -1 C) -4 D) 4
- Eighteen 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) 68% B) 72% C) 75% D) 82%
- Simplify: $5x - 3(2x + 7)$
A) $7x + 4$ B) $-x - 7$ C) $-x - 21$ D) $-x + 21$
- Translate "eight less than the quotient of a number and four" into a variable expression.
A) $\frac{x}{4} - 8$ B) $\frac{4}{x} - 8$ C) $8 - \frac{4}{x}$ D) $8 - \frac{x}{4}$
- Evaluate $2x^2 + 3y$ when $x = -2$ and $y = 3$
A) 1 B) 17 C) -17 D) 25
- Solve: $5x - (2x - 7) = 10$
A) $\frac{17}{3}$ B) -1 C) $\frac{3}{2}$ D) 1
- Solve: $-\frac{13}{15}x = 39$
A) $-\frac{169}{5}$ B) -45 C) 45 D) $\frac{169}{5}$
- Solve: $3(3 - x) < 5(x + 5)$
A) $x > -2$ B) $x > 2$ C) $x < -2$ D) $x < 8$
- A bank contains 25 coins in dimes and nickels. The coins have a total value of \$1.65. Find the number of nickels in the bank.
A) 8 nickels B) 15 nickels C) 17 nickels D) 19 nickels
- The perimeter of a rectangle is 36 ft. The width is 6 ft less than the length. Find the width of the rectangle.
A) 6 ft B) 12 ft C) 8 ft D) 10 ft

12. A software program that regularly sells for \$65 is on sale for \$46.80. Find the discount rate.

- A) 24% B) 38.9% C) 28% D) 32%

13. An investment of \$3000 is made at an annual simple interest rate of 9%. How much a second investment must be made at an annual simple interest rate of 10.8% so that both accounts earn the same interest?

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

14. How many ounces of pure water must be added to 80 oz of a 35% salt solution to make a solution that 14% salt?

- A) 120 oz B) 200 oz C) 40 oz D) 80 oz

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?

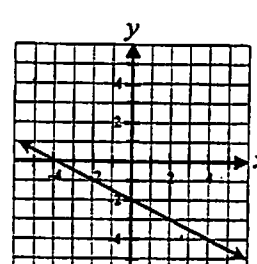
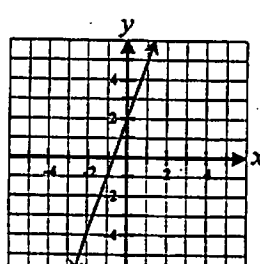
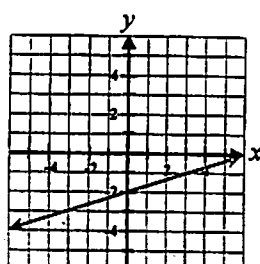
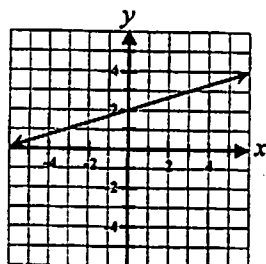
- A) 3.5 hours B) 2 hours C) 6 hours D) 1 hour

16. Find the slope of the line that contains the points $(-2, -6)$ and $(1, -3)$

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

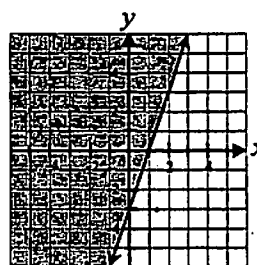
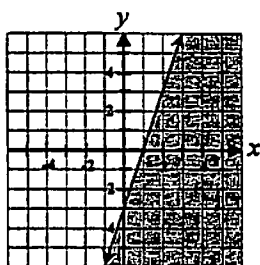
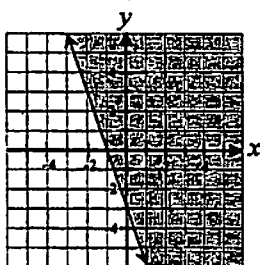
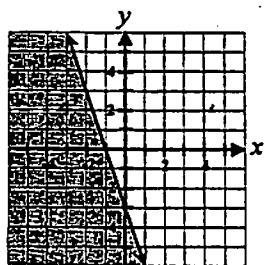
17. Which is the graph of $y = \frac{1}{3}x + 2$?

- A) B) C) D)



18. Which is the graph of the solution set of $3x + y \leq -3$?

- A) B) C) D)



19. Solving the system
 $y = x - 9$
 $5x + 2y = 10$

- gives A) $y = -\frac{55}{9}$ B) $y = -4$ C) $y = -2$ D) $y = -5$

20. Solving the system $9x + 3y = 13$
 $18x + 3y = 17$
 gives A) $x = \frac{7}{19}$ B) $x = \frac{4}{9}$ C) $x = -\frac{4}{9}$ D) $x = -\frac{7}{19}$
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 boat in calm water.
 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: $(x^2 - 2x + 25) \div (x + 3)$
 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: $(-4u^2)(u^{-3})^2$
 A) $-\frac{4}{u^4}$ B) $-\frac{1}{4u^4}$ C) $-\frac{4}{u}$ D) $-\frac{4}{u^6}$
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: $5c^2 - 20$
 A) $5(c + 2)(c - 2)$ B) $5(c - 2)^2$ C) $5(c + 2)^2$ D) $5(2 + c)(2 - c)$
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) $\frac{7(x + 1)}{4(x + 2)}$ D) $\frac{7(x - 1)}{4(x + 2)}$
30. Simplify: $\frac{1 + \frac{3}{x} - \frac{4}{x^2}}{1 + \frac{7}{x} + \frac{12}{x^2}}$
 A) $\frac{x - 1}{x + 3}$ B) $\frac{x + 3}{x + 1}$ C) $\frac{x^2 + 3x + 4}{x^2 + 7x + 12}$ D) 1

31. 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) $g = \frac{m}{fm - T}$

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: $y + \frac{2y - 4}{y - 2} = 3$

- A) 2 and 1 B) 2 C) No solution D) 1

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: $\sqrt{81x^4y^7}$

- A) $9x^2y^3$ B) $3x^2y^2\sqrt{y}$ C) $9x^2y^5\sqrt{y}$ D) $9x^2y^3\sqrt{y}$

36. Simplify: $\frac{\sqrt{175x^3}}{\sqrt{5x^9}}$

- A) $\frac{\sqrt{35}}{x^6}$ B) $\frac{\sqrt{35}}{x^3}$ C) $\frac{35}{x^6}$ D) $\frac{35}{x^3}$

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

- A) 8 B) $\frac{17}{4}$ 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. Which is the graph of $y = x^2 + 2x + 3$?

A)

B)

C)

D)

