

Spring, 2009

(Section 10.3, Page 709, #43)1. *Solve.*

$$4y - 4 + y + 24 = 6y + 20 - 4y$$

(Section 10.3, Page 709, #47)3. *Solve. Clear fractions first.*

$$\frac{2}{3} + \frac{1}{4}t = \frac{1}{3}$$

(Section 10.3, Page 709, #46)5. *Solve. Clear fractions first.*

$$\frac{7}{8}x - \frac{1}{4} + \frac{3}{4}x = \frac{1}{16} + x$$

(Section 10.3, Page 710, #68)7. *Solve.*

$$5x + 5(4x - 1) = 20$$

(Section 10.3, Page 710, #82)9. *Solve.*

$$5(t + 3) + 9 = 3(t - 2) + 6$$

(Section 10.4, Page 718, #29)11. *Solve for the indicated letter.*

$$y = bx + c, \text{ for } x$$

(Section 10.6, Page 740, #1)

13. *Pipe Cutting.* A 240-in. pipe is cut into two pieces. One piece is three times the length of the other. Find the lengths of the pieces.

**(Section 10.3, Page 709, #44)**2. *Solve.*

$$5y - 7 + y = 7y + 21 - 5y$$

(Section 10.3, Page 709, #49)4. *Solve. Clear fractions first.*

$$\frac{2}{3} + 3y = 5y - \frac{2}{15}$$

(Section 10.3, Page 709, #51)6. *Solve. Clear fractions first.*

$$\frac{5}{3} + \frac{2}{3}x = \frac{25}{12} + \frac{5}{4}x + \frac{3}{4}$$

(Section 10.3, Page 710, #71)8. *Solve.*

$$6 - 2(3x - 1) = 2$$

(Section 10.3, Page 711, #85)10. *Solve.*

$$2[4 - 2(3 - x)] - 1 = 4[2(4x - 3) + 7] - 25$$

(Section 10.4, Page 718, #31)12. *Solve for the indicated letter.*

$$A = \frac{a + b + c}{3}, \text{ for } b$$

(Section 10.6, Page 740, #2)

14. *Board Cutting.* A 72-in. board is cut into two pieces. One piece is 2 in. longer than the other. Find the lengths of the pieces.



(Section 10.6, Page 742, #19)

15. *Price of a Textbook.* Evelyn paid \$89.25, including 5% tax, for her biology textbook. How much did the book itself cost?

(Section 10.6, Page 742, #20)

16. *Price of a Printer.* Jake paid \$100.70, including 6% tax, for a color printer. How much did the printer itself cost?

(Section 10.6, Page 743, #35)

17. *Average Price.* Tom paid an average of \$34 per tie for a recent purchase of three ties. The price of one tie was twice as much as another, and the remaining tie cost \$27. What were the prices of the other two ties?

(Section 10.6, Page 743, #36)

18. *Average Test Score.* Jaci averaged 84 on her first three history exams. The first score was 67. The second score was 7 less than the third score. What did she score on the second and third exams?

(Section 11.2, Page 797, #6)

19. Find (a) the coordinates of the y -intercept and (b) the coordinates of the x -intercept.

$$5x + 2y = 20$$

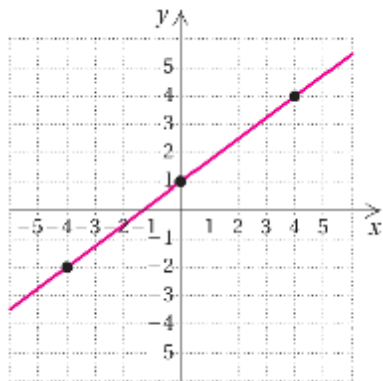
(Section 11.2, Page 797, #9)

20. Find (a) the coordinates of the y -intercept and (b) the coordinates of the x -intercept.

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

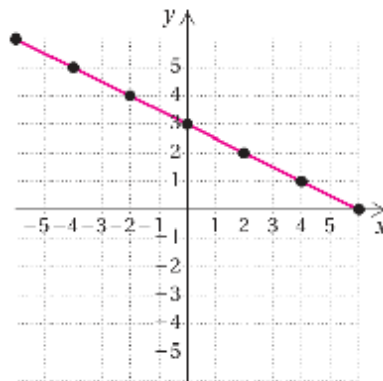
(Section 11.3, Page 810, #5)

21. Find the slope, if it exists, of the line.



(Section 11.3, Page 810, #6)

22. Find the slope, if it exists, of the line.



(Section 11.3, Page 811, #19)

23. Find the slope, if it exists, of the line containing the given pair of points.
 $(4, -2), (4, 3)$

(Section 11.3, Page 811, #20)

24. Find the slope, if it exists, of the line containing the given pair of points.
 $(4, -3), (-2, -3)$

(Section 11.4, Page 819, #18)

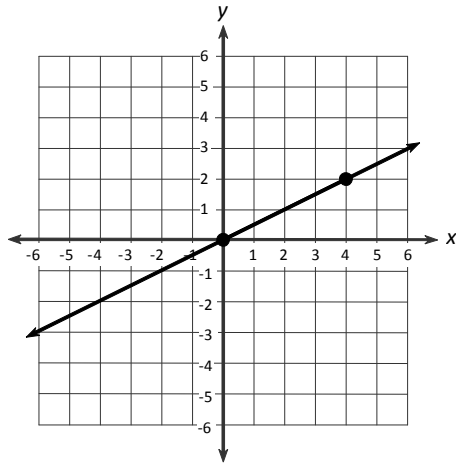
25. Find an equation of the line containing the given point and having the given slope.
 $(2, 5), m = 5$

(Section 11.4, Page 819, #22)

26. Find an equation of the line containing the given point and having the given slope.
 $(4, -2), m = 6$

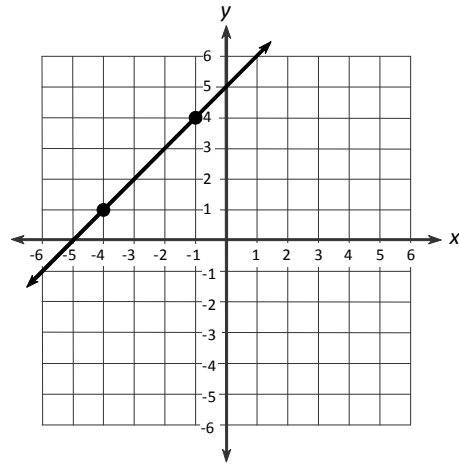
(Section 11.4, Page 819, #28)

27. Find an equation of the line that contains the given pair of points. $(0, 0)$ and $(4, 2)$



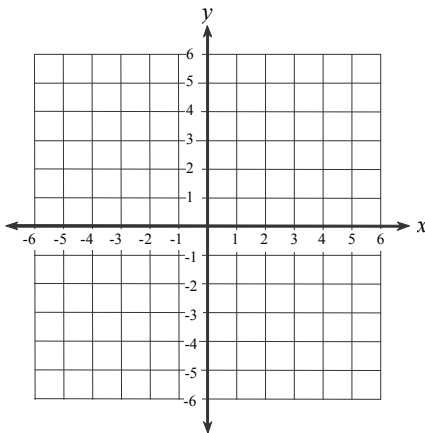
(Section 11.4, Page 820, #30)

28. Find an equation of the line that contains the given pair of points. $(-4, 1)$ and $(-1, 4)$



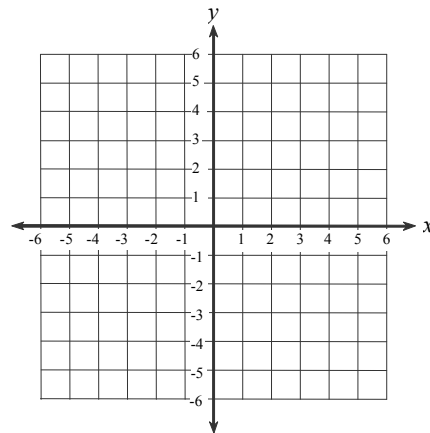
(Section 11.5, Page 826, #26)

29. Graph using slope and y-intercept.
 $4x + 5y = 15$



(Section 11.5, Page 826, #30)

30. Graph using slope and y-intercept.
 $x - 3y = 9$



(Section 12.1, Page 859, #83)

31. Multiply and simplify.
 $a^{11} \cdot a^{-3} \cdot a^{-18}$

(Workbook 12.1, Page 370, #33)

32. Multiply and simplify.
 $c^8 \cdot c^{-4} \cdot c^{-5}$

(Section 12.2, Page 870, #33)

33. Simplify.

$$(a^{-5}b^7c^{-2})^3$$

(Section 12.2, Page 870, #38)

34. Simplify.

$$(-8x^3y^{-2})^3$$

(Section 12.2, Page 872, #81)

35. Divide and write scientific notation for result.

$$\frac{8.5 \times 10^8}{3.4 \times 10^{-5}}$$

(Section 12.2, Page 872, #85)

36. Divide and write scientific notation for result.

$$\frac{7.5 \times 10^{-9}}{2.5 \times 10^{12}}$$

(Section 12.3, Page 883, #5)

37. Evaluate when $x = 4$ and when $x = -1$.

$$x^3 - 5x^2 + x$$

(Section 12.3, Page 883, #11)

38. Evaluate when $x = -2$ and when $x = 0$.

$$-3x^3 + 7x^2 - 3x - 2$$

(Workbook 12.4, Page 383, #17)

39. Subtract.

$$(-2x - 3) - (x^2 + 5x - 5)$$

(Workbook 12.4, Page 383, #19)

40. Subtract.

$$(8x^4 + 2x^3 - 5) - (7x^3 - x^2 - 1)$$

(Workbook 12.6, Page 393, #7)

41. Multiply.

$$(2a - 5)(a + 3)$$

(Workbook 12.6, Page 394, #10)

42. Multiply.

$$(-2n + 3)(n + 8)$$

(Section 12.6, Page 912, #47)

43. Multiply mentally, if possible.

$$(5m - 2)(5m + 2)$$

(Section 12.6, Page 912, #50)

44. Multiply mentally, if possible.

$$(6x^5 - 5)(6x^5 + 5)$$

(Section 12.6, Page 912, #64)

45. Multiply mentally, if possible.

$$(2x - 1)^2$$

(Section 12.6, Page 912, #65)

46. Multiply mentally, if possible.

$$(3x^2 + 1)^2$$

(Section 12.8, Page 928, #18)

47. *Divide and check.*

$$(18x^6 - 27x^5 - 3x^3) \div (9x^3)$$

(Section 12.8, Page 928, #24)

48. *Divide and check.*

$$\frac{4x^4y - 8x^6y^2 + 12x^8y^6}{4x^4y}$$

(Section 13.1, Page 945, #18)

49. *Factor. Check by multiplying.*

$$3x^4 - x^2$$

(Section 13.1, Page 945, #19)

50. *Factor. Check by multiplying.*

$$8x^4 - 24x^2$$

(Section 13.1, Page 946, #48)

51. *Factor by grouping.*

$$7x^3 - 14x^2 - x + 2$$

(Section 13.1, Page 946, #50)

52. *Factor by grouping.*

$$2x^3 + 12x^2 - 5x - 30$$

(Section 13.2, Page 954, #26)

53. *Factor.*

$$x^2 - 72 + 6x$$

(Section 13.2, Page 954, #31)

54. *Factor.*

$$x^2 + x - 42$$

(Section 13.2, Page 955, #63)

55. *Factor.*

$$6a^{10} - 30a^9 - 84a^8$$

(Section 13.2, Page 955, #64)

56. *Factor.*

$$7x^9 - 28x^8 - 35x^7$$

(Section 13.5, Page 979, #62)

57. *Factor completely.*

$$25x^2 - 4$$

(Section 13.5, Page 979, #63)

58. *Factor completely.*

$$4x^2 - 25y^2$$

(Section 13.7, Page 996, #45)

59. *Solve using the principle of zero products.*

$$6x^2 - 4x = 10$$

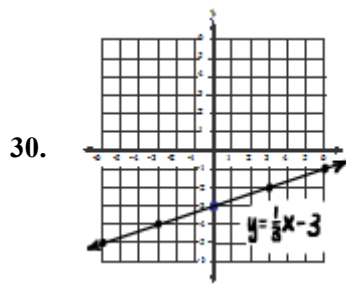
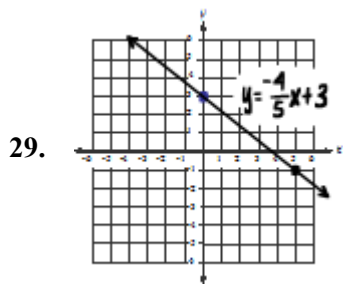
(Section 13.7, Page 996, #48)

60. *Solve using the principle of zero products.*

$$2y^2 + 12y = -10$$

Math 85 Final Exam Study Guide Answer Key

1. 0 2. 7 3. $-\frac{4}{3}$ 4. $\frac{2}{5}$
5. $\frac{1}{2}$ 6. -2 7. 1 8. 1 ← **Corrected**
9. -12 10. $\frac{4}{7}$ 11. $x = \frac{y-c}{b}$ 12. $b = 3A - a - c$
13. 180 in.; 60 in. 14. 35 in.; 37 in. 15. \$85 16. \$95
17. \$25 and \$50 18. 96 and 89 19. (0, 10); (4, 0) 20. $(0, \frac{10}{3}); (-\frac{5}{2}, 0)$
21. $\frac{3}{4}$ 22. $-\frac{1}{2}$ 23. Not defined 24. 0
25. $y = 5x - 5$ 26. $y = 6x - 26$ 27. $y = \frac{1}{2}x$ 28. $y = x + 5$



31. $\frac{1}{a^{10}}$ 32. $\frac{1}{c}$ 33. $\frac{b^{21}}{a^{15}c^6}$ 34. $-\frac{512x^9}{y^6}$
35. 2.5×10^{13} 36. 3.0×10^{-21} 37. -12; -7 38. 56; -2
39. $-x^2 - 7x + 2$ 40. $8x^4 - 5x^3 + x^2 - 4$ 41. $2a^2 + a - 15$ 42. $-2n^2 - 13n + 24$
43. $25m^2 - 4$ 44. $36x^{10} - 25$ 45. $4x^2 - 4x + 1$ 46. $9x^4 + 6x^2 + 1$
47. $2x^3 - 3x^2 - \frac{1}{3}$ 48. $1 - 2x^2y + 3x^4y^5$ 49. $x^2(3x^2 - 1)$ 50. $8x^2(x^2 - 3)$
51. $(7x^2 - 1)(x - 2)$ 52. $(2x^2 - 5)(x + 6)$ 53. $(x + 12)(x - 6)$ 54. $(x - 6)(x + 7)$
55. $6a^8(a + 2)(a - 7)$ 56. $7x^7(x - 5)(x + 1)$ 57. $(5x + 2)(5x - 2)$ 58. $(2x + 5y)(2x - 5y)$
59. $x = -1, \frac{5}{3}$ 60. $x = -5, -1$