# Math 050 Study Guide

Name: _Key_

This study guide represents the type of questions that are on the final but is not meant to be all-inclusive. Students will need to review **ALL** the content presented in the course.

## Chapter 1

*Exercises 12-14: Evaluate the expression.*

1. $14 - 15 \div 3 + 6$

1. ___15___

2. $\dfrac{(4+2) \cdot 3}{20 - 2 \cdot 7}$

2. ___3___

3. $32 - \left(2 \cdot 5 - \left(6^2 \div 3\right) + 7\right)$

3. ___27___

*Simplify the algebraic expression.*

4. $7x + (2x + 3)$

4. ___9x+3___

5. $2y + 7 + y + 4$

5. ___3y + 11___

## Chapter 2

6. Evaluate $x - y$ for $x = -2$ and $y = 5$.

6. ___-7___

7. Evaluate $-12^2$.

7. ___-144___

8. Simplify the expression $-\sqrt{64}$.

8. ___-8___

*Evaluate the expression.*

9. $6 + 9^2 \div 3 - 27$

9. ___6___

10. $\sqrt{-11 + 47} - (-7)$

10. ___13___

11. $\dfrac{(-4-7) \cdot 4}{3^2 - \sqrt{25}}$

11. ___-11___

*Evaluate the expression.*

12. $13 - \left| 6^2 \div (-12) \right|$

12. _____ $10$ _____

13. $\dfrac{(-3-9) \cdot 2}{2^2 + \sqrt{16}}$

13. _____ $-3$ _____

14. Is $-6$ a solution to $\dfrac{-12}{y+2} = 3$?

14. _____ $Yes$ _____

*Solve the equation.*

15. $65 = -13x$

15. _____ $x = -5$ _____

16. $-\sqrt{y} = -4$

16. _____ $y = 16$ _____

## Chapter 3

*Simplify the expression.*

17. $2(x+3) - 4(3x-1)$

17. _____ $-10x + 10$ _____

18. $5z - (z-7) + 8$

18. _____ $4z + 15$ _____

19. $(-t-8) - (3t-4)$

19. _____ $-4t - 4$ _____

*Solve the equation.*

20. $23 = x - 17$

20. _____ $x = 40$ _____

21. $7a = 6a - 14$

21. _____ $a = -14$ _____

22. $3n = -36$

22. _____ $n = -12$ _____

23. $\dfrac{m}{5} = -15$

$m = -75$

23. _____ $m = -75$ _____

24. $-3(x-4) = -2x - 16 + 3x$

24. _____ $x = 7$ _____

25. When the sum of 6 and a number is divided by −2, the result is 5. Find the value of the unknown number.

25. _____ −16 _____

26. The length of a rectangle is 3 inches longer than the width. If the perimeter of the rectangle is 42 inches, find the measures of the length and width.

26. _____ Length: 12in _____
    width: 9in

## Chapter 6

27. Write the ratio $4:24$ as a fraction in simplest form.

27. _____ $\frac{1}{6}$ _____

28. A train travels 33 miles in 20 minutes. Write this rate as a unit rate.

28. _____ 1.65 mi/min _____

29. A 20-ounce box of cereal sells for $3.90. Find the unit price of the cereal.

29. _____ $.195/oz _____

*Solve the proportion.*

30. $\dfrac{-15}{x} = \dfrac{-3}{5}$

30. _____ 25 _____

31. $\dfrac{\frac{7}{10}}{6} = \dfrac{w}{-\frac{5}{14}}$

31. _____ $-\frac{11}{24}$ _____

*Convert the measurement as indicated.*

32. 21.5 feet to inches

32. _____ 258in _____

33. $5\frac{1}{4}$ gallons to pints

33. _____ 42 pt _____

34. 3800 milligrams to dekagrams

34. _____ .38 dag _____

35. 2700 feet to kilometers

35. _____ .82 km _____

36. Use a formula to convert $25°C$ to Fahrenheit.

36. _____ 77 degrees Fahrenheit _____

**37.** If the label on a 3.4-quart bottle of milk states that the serving size is 220 milliliters, how many full servings are in the bottle?

37. <u>14 Servings</u>

Find the unit price for each size option.

**38.** Large box of cereal: 24 ounces for $3.60   $.15/oz
Small box of cereal: 16 ounces for $2.80   $.175/oz

Which is the better buy?

38. <u>Large butter buy</u>

## Chapter 7

*Write the given percent as a fraction or mixed number in simplest form.*

**39.** 35%

39. <u>$\frac{7}{20}$</u>

**40.** 340%

40. <u>$\frac{17}{5} = 3\frac{2}{5}$</u>

*Write the given fraction or decimal as a percent.*

**41.** $\frac{17}{40}$

41. <u>42.5 %</u>

*Use a proportion to find the unknown value.*

**42.** 33 out of 60 is what percent?

42. <u>55%</u>

**43.** 12.5% of what number is 75?

43. <u>600</u>

**44.** Find the simple interest when $2700 is borrowed for 4 months at 3.2% interest.
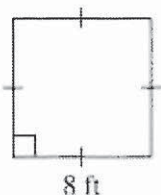
44. <u>$ 28.80</u>

**45.** A stereo system on clearance is marked at 40% off. If the regular price is $319, find the discount and the sale price.
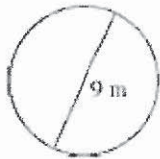
45. Discount $127.60
Sale Price $191.40

## Chapter 8

**46.** Find the area of the polygon.

46. <u>64 ft²</u>

8 ft

**47.** Find the approximate area of the circle, using 3.14 for $\pi$. Round your answer to the nearest tenth.



9 m

47. 63.6 sq. m.

**48.** For the circle shown, do the following.
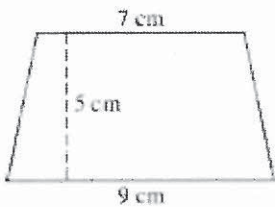


$\frac{1}{3}$ ft

(a) Find the exact circumference of the circle.

(b) Approximate the circumference, using 3.14 for $\pi$. Round answer to the nearest tenth.
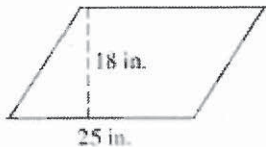
48. (a) $C = \frac{2}{3} \pi$ ft

(b) Approx. 2.1 ft

**49.** Find the area of the polygon.



7 cm

5 cm

9 cm

49. $40 \, cm^2$

**50.** Find the area of the polygon.
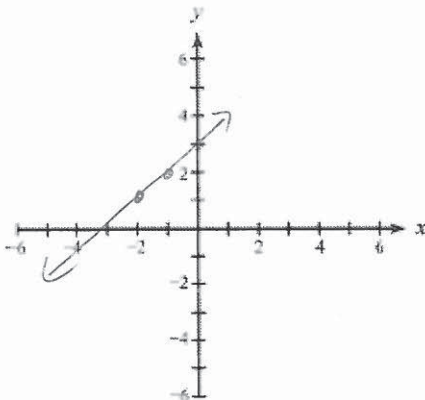


18 in.

25 in.
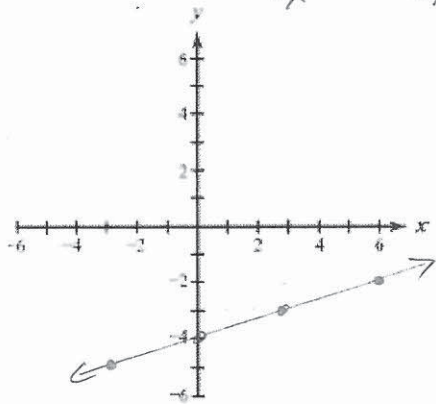
50. $450 \, in^2$

## Chapter 10

**51.** Determine whether the ordered pair $(-2, -1)$ is a solution for the equation $y = 5 + 2x$.

51. No

**52.** Sketch a line passing through the point $(-2.1)$ and having slope 1.

**53.** Graph the equation $x - 3y = 12$.

$-x \qquad -x$

$\dfrac{-3y}{-3} = \dfrac{-x}{-3} + \dfrac{12}{-3}$

$y = \tfrac{1}{3}x - 4$

**54.** Write the equation $6x - 2y = 5$ in slope-intercept

$-6x \qquad -6x$

form. Give the slope and the $y$-intercept.

$\dfrac{-2y}{-2} = \dfrac{-6x}{-2} + \dfrac{5}{-2}$

$y = 3x - \tfrac{5}{2}$

**54.** $y = 3x - \tfrac{5}{2}$

$m = 3 \quad b = \tfrac{5}{2}$

**55.** Write the equation of a vertical line passing through the point $\left(\tfrac{1}{2}, -\tfrac{3}{4}\right)$.

**55.** $x = \tfrac{1}{2}$

**56.** Find the slope of a line passing through the points $\left(\tfrac{1}{2}, -2\right)$ and $(0, -3)$.

**56.** $m = 2$

**57.** Find the slope-intercept form for the line with slope $-\tfrac{2}{3}$ and $y$-intercept 4.

**57.** $y = -\tfrac{2}{3}x + 4$

**58.** Find the slope-intercept form of the line parallel to $y = 3 - 4x$, passing through $\left(\tfrac{1}{2}, 1\right)$.

**58.** $y = -4x + 3$

**59.** Find the slope-intercept form of the line perpendicular to $y = -\tfrac{3}{5}x - 2$, passing through $(6, -2)$.

**59.** $y = \tfrac{5}{3}x - 12$

**60.** Complete the table for the equation $3x + 2y = 6$.

**60.**

| $x$ | $-1$ | 0 | 1 | 2 | 3 |
|-----|------|---|---|---|---|
| $y$ | $\tfrac{9}{2}$ | 3 | $\tfrac{3}{2}$ | 0 | $-\tfrac{3}{2}$ |

# Chapter 12

*Simplify.*

61. $(-2x+5)-(4x+7)$

61. $-6x-2$

62. $(2x^3-4x^2+x-1)-(-3x^3+7x+5)$

62. $5x^3-4x^2-6x-6$

63. $(2x^2y-4x^2)+(8x^2-5x^2y)$

63. $-3x^2y+4x^2$

*Evaluate.*

64. $\left(-\frac{2}{5}\right)^0$

64. $1$

65. $(-2)^{-3}$

65. $-\frac{1}{8}$

*Write the expression with positive exponents.*

66. $-2x^8\cdot 3x^{-4}$

66. $-6x^4$

67. $\left(a^{-2}b^3\right)^{-2}$

67. $\dfrac{a^4}{b^6}$

68. $\dfrac{6ab^2}{3a^2b^3}$

68. $\dfrac{2}{ab}$

69. $\frac{1}{4}x^2(12x-8)$

69. $3x^3-2x^2$

70. $(2x-5)(x+7)$

70. $2x^2+9x-35$

71. $(3x^2+4)(3x^2-4)$

71. $9x^4-16$

72. $(2+3x)^2$

72. $4+12x+9x^2$

73. Write $2.6\times10^{-5}$ in standard form.

73. $.000026$

# Chapter 13

*Factor completely.*

74. $ax + az - bx - bz$

$a(x+z) - b(x+z)$

$(a-b)(x+z)$

75. $2x^3 - x^2 + 10x - 5$

$(x^2+5)(2x-1)$

76. $12a^3 - 75a$

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

77. $x^2 - 2x - 24$

$(x-6)(x+4)$

78. $x^2 - 25$

$(x-5)(x+5)$

79. $4x^4 + 8x^2 - 12$

$4(x^2+3)(x+1)(x-1)$