Math 980 Modules 5 and 6 Objectives Review Answer Key

Module 5 – Exponents, Radicals, and Polynomials

5.1 Use the Product Rule of Exponents

1.) b^{13}

2.) $6x^6y^{19}z^8$

5.1 Use the Power Rule of Exponents

3.) $64x^{24}y^{27}z^{30}$

4.) $\frac{x^6}{27}$

5.1 Use the Quotient Rule of Exponents

5.) 9

6.) $\frac{7}{13}x^3y^5$

5.1 Use the Negative Exponent Rules

7.) $\frac{1}{4}$

8.) $\frac{5}{y^{15}}$

9.) 25

10.) 81

5.1 Use the Zero Power Rule of Exponents

11.) 1

12.) 1

5.2 Using Exponent Rules Together

13.) $72a^{21}b^{16}c^{16}$

14.) $\frac{y^3z^{25}}{x^7}$

15.) $\frac{49a^7}{b^7}$

16.) $\frac{x^{27}y^9z^{15}}{27}$

5.3 Rewrite in Scientific Notation

17.) 5.9×10^4

18.) 6.49×10^{-5}

5.3 Rewrite as a Whole Number or Decimal

19.) –1,850,000

20.) 0.0882

5.3 Find the Product in Scientific Notation

21) 7.05×10^{-12}

22.) 1.716×10^{-7}

5.3 Find the Quotient in Scientific Notation

23.) 1.8×10^{-7}

24.) 4.8×10^{17}

5.4 Estimate a Square Root

25.) 8 and 9

5.4 Estimate a Square Root with a Calculator

26.) 10.25

5.4 Evaluate Square Roots

27.) –16

28.) Not a real number

5.4 Evaluate Radicals with Higher Indices

29.) 2

30.) –6

5.5 Simplify Square Roots

31.) $3\sqrt{5}$

32.) $8\sqrt{5}$

5.5 Simplify Radicals with Variables

33.) $12p^4c^3\sqrt{p}$

34.) $6x^7y^5\sqrt{3xy}$

5.5 Simplify Radicals with Coefficients

35.) $25a^3\sqrt{5}$

36.) $-9x^4\sqrt{3x}$

5.5 Simplify Higher Roots

37.) $-3b^4$

38.) $6\sqrt[4]{5}$

5.6 Use the Pythagorean Theorem

39.) 13 ft.

40.) 11.3 ft.

5.7 Identify the Characteristics of a Polynomial

41.) The leading coefficient is 8, constant term is 4, and the degree is 3.

5.7 Combine Like Terms

42.) $21x^4 - 5x^3$

43.) $-12x^4 + 10x^3 - 12x^2 + 9x - 5$

5.7 Multiply Polynomials

44.) $8x^5 - 6x^4 + 4x^3$

45.) $a^2 + 13a + 42$

46.) $x^2 - 8x + 15$

47.) $2a^2 + 3ab - 35b^2$

48.) $9a^2 - 24a + 16$

5.8 Factor the Greatest Common Factor

49.) $4x^3(3x^3 + 6x - 2)$

50.) $-5x^2(7x^2 + 3x + 1)$

5.8 Factor Trinomials

51.) (x+4) (x+5)

52.) (x – 3) (x – 6)

53.) (a + 2) (a – 5)

54.) (w + 10y) (w – 2y)

55.) $(z-8)^2$

56.) x(x + 8) (x – 5)

57.) Prime

Module 6 – Exponential and Logarithmic Functions

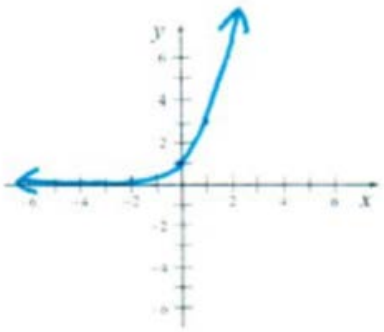
6.1 Evaluate an Exponential Function

58.) *f(3)* = 1

f(5) = 16

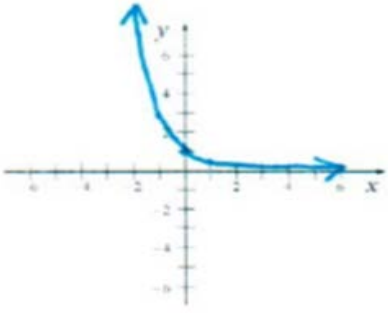
6.1 Graph an Exponential Function – Growth

59.)



6.1 Graph an Exponential Function – Decay

60.)



6.2 Solve Applications Using Exponential Functions

61.) $831.57

62.) $4,088.28

6.3 Convert Exponential Equations to Logarithmic Equations

63.) $\log_2(128) = 7$

64.) $\log_{6561}(9) = \frac{1}{4}$

65.) $\log_8\left(\frac{1}{4096}\right) = -4$

6.3 Convert Logarithmic Equations to Exponential Equations

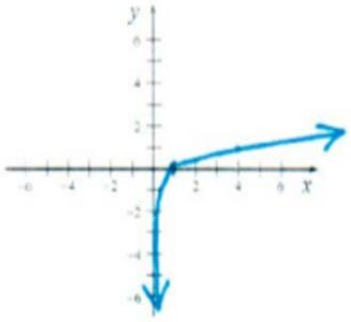
66.) $7^4 = 2401$

67.) $216^{\frac{1}{3}} = 6$

68.) $4^{-2} = \frac{1}{16}$

6.3 Graph Logarithmic Functions

69.)



6.4 Finding Common Logarithms

70.) –5

71.) 1.7404

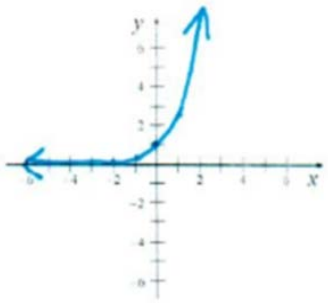
6.5 Evaluate Natural (base *e*) Logarithms

72.) 3.6889

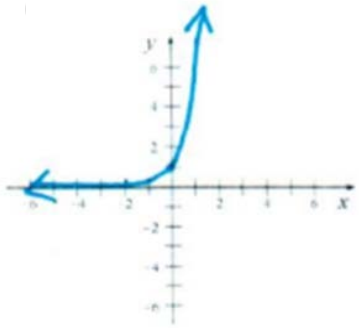
73.) –5.2983

6.5 Graph Natural (base *e*) Logarithmic Functions

74.)



75.)



6.6 Solve Exponential Equations

76.) 3

77.) 4.700

78.) 0.644

6.7 Solve Logarithmic Equations

79.) 3

80.) $\frac{1}{4096}$

81.) 8

6.8 Solve Applications Using Logarithmic Functions

82.) 7.7

83.) 47,522

84.) 135 mg