

HWU5

1. algebraic
2. transcendental
3. one to one
4. natural exponent, natural

33. 0.47

34. 24.5

35. 3.9×10^{-22}

36. 1.96×10^{52}

37. 7166.65

$$51. \quad 3^{x+1} = 3^3$$

$$x+1=3$$

$$\boxed{x=4}$$

$$52. \quad 2^{x-3} = 2^4$$

$$x-3=4$$

$$\boxed{x=7}$$

$$53. \quad 2^{-x} = 2^5$$

$$-x=5$$

$$\boxed{x=-5}$$

$$54. \quad 5^{x-2} = 5^{-3}$$

$$x-2=-3$$

$$\boxed{x=-1}$$

$$55. \quad e^{3x+2} = e^3$$

$$3x+2=3$$

$$3x=1$$

$$\boxed{x=1/3}$$

$$56. \quad 2x-1=4$$

$$2x=5$$

$$\boxed{x=5/2}$$

$$57. \quad x^2-3=2x$$

$$x^2-2x-3=0$$

$$(x-3)(x+1)=0$$

$$\boxed{x=3, -1}$$

$$58. \quad x^2+6x=5x$$

$$x^2-5x+6=0$$

$$(x-2)(x-3)=0$$

$$\boxed{x=2, 3}$$

~~52. A=1000e^{0.04}~~
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52. a) $n=1$

$$A = 1000 \left(1 + \frac{0.04}{1}\right)^{1(40)}$$

$$\boxed{A = 10,285.72}$$

b) $n=2$

$$A = 1000 \left(1 + \frac{0.04}{2}\right)^{2(40)}$$

$$\boxed{A = 10,640.89}$$

c) $n=4$

$$\boxed{A = 10,828.46}$$

d) $n=12$

$$\boxed{A = 10,957.45}$$

e) $n=365$

$$\boxed{A = 11,021.00}$$

f) $A = 1000(e)^{0.04(40)}$

$$\boxed{A = 11,023.18}$$

67. $A = 30,000 e^{0.05(25)}$
 $A = \$104,710.29$

68. $A = 5000(e^{0.075(50)})$
 $A = \$212,605.41$

69. $C(10) = 23.95(1.04)^{10}$
 $= \$35.45$

77. True, D2

78. False, e has no end

90. $y = 2^x$ (f)
 $y = 10^x$ (d)
 $y = e^x$ (e)
 $y = 2^{-x}$ (a)
 $y = 10^{-x}$ (c)
 $y = e^{-x}$ (b)