Sec 4.4 Solving Exponentials
(equations where the exponent contains a variable)
Today-

1. rewrite to get the same base
2. set exponents equal
3. solve.

Solve-

$$2^{3x-8} = 16$$

$$2^{3x-8} = 2^4$$

$$3x - 8 = 4$$

$$3x = 12$$

$$x = 4$$

$$27^{x+3} = 9^{x+1}$$

$$3^{3(x+3)} = 3^{2(x+1)}$$

$$3x+9 = 2x+2$$

$$x = ^-7$$

$$4^x = 64$$

$$4^x = 4^3$$

$$x = 3$$

$$6^{1-x} = 1/216$$

$$6^{1-x} = \frac{1}{216}$$

$$6^{1-x} = \frac{1}{6^3}$$

$$6^{1-x} = 6^{-3}$$

$$1-x = -3$$

$$-x = -4$$

$$x = 4$$

$$5^{\frac{x-2}{3}} = \sqrt[3]{5}$$

$$5^{\frac{x-2}{3}} = 5^{1/3}$$

$$\frac{x-2}{3} = \frac{1}{3}$$

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

$$x-2 = 1$$

$$x = 3$$

$$e^{2x+3} = \frac{1}{e^{3x}}$$

$$e^{2x+3} = e^{-3x}$$

$$2x+3 = -3x$$

$$3 = -5x$$

$$-3/5 = x$$

$$16^x = \frac{1}{\sqrt[4]{2}}$$

$$16^x = \frac{1}{2^{1/4}}$$

$$2^{4x} = 2^{-1/4}$$

$$\frac{4x = -1/4}{4 \quad\quad 4}$$

$$x = -1/16$$

Sec 4.4
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1-22 odds

Solutions to 4.4.1 (1-22 odds)

1. 6
3. 3
5. 3
7. 2
9. 3/5

11. 3/2
13. 4
15. 5
17. -¼
19. 13
21. -2