

Suggested Problems

Sec. 8.1 : 25, 27, 35, 43, 67

8.2 : 11, 19, 43, 49, 57, 63

Section 8.3

#7  $c^{1/4} \cdot c^{-2/3}$

→ use exponential rule  $a^m \cdot a^n = a^{m+n}$ 

→ Adding fractions requires common denominator

$$= c^{\frac{1}{4} + \frac{-2}{3}}$$

$$= c^{\frac{1}{4} \cdot \frac{3}{3} - \frac{2}{3} \cdot \frac{4}{4}} = c^{\frac{3}{12} - \frac{8}{12}}$$

#27  $\left(\frac{x^3}{y^{-6}}\right)^{-4/3}$

→ distribute the exponent:  $\left(\frac{a^m}{a^n}\right)^p = \frac{(a^m)^p}{(a^n)^p}$ 

→ make sure to turn all negative exponents to positive exponents. Can do this at the end

$$= \frac{(x^3)^{-4/3}}{(y^{-6})^{-4/3}} = \frac{x^{3 \cdot (-4/3)}}{(y^{-6})^{-4/3}} = \frac{x^{-4}}{y^8} = \frac{1}{x^4 y^8}$$

Section 8.6

#5  $-i^{48} = (-1) \cdot i^{48} = (-1) \cdot (i^4)^{12}$

#11  $-i^{-26} = (-1) \cdot i^{-26} = (-1) \cdot \frac{1}{i^{26}} = (-1) \cdot \frac{1}{(i^2)^{13}}$

#53  $(3+2i)^2 = (3+2i)(3+2i) \rightarrow \text{now FOIL}$

#67, 69, 77, 81 all require the complex conjugate of the denominator.

# HW 6 - Hints and Partial Solutions

(2)

## Section 8.6

$$\#67 \quad \frac{2+5i}{1-3i} = \frac{2+5i}{1-3i} \cdot \frac{1+3i}{1+3i} = \frac{(2+5i)(1+3i)}{(1-3i)(1+3i)}$$

→ now FOIL  
the top & bottom

## Section 9.1

#37 Make sure the square term has coefficient of 1

$$\frac{2r^2}{2} - \frac{7r}{2} = \frac{4}{2}$$

$$\rightarrow r^2 - \frac{7}{2}r = 2$$

$$b = -\frac{7}{2}$$

$$\frac{b}{2} = -\frac{7}{4}$$

$$\left(\frac{b}{2}\right)^2 = \frac{49}{4}$$

$$r^2 - \frac{7}{2}r + \frac{49}{4} = 2 + \frac{49}{4}$$

$$\left(r - \frac{7}{4}\right)^2 = \left(\frac{2}{1}\right)\left(\frac{49}{4}\right) + \frac{49}{4}$$

## Section 9.2

$$\#15 \quad a=2, b=3, c=0$$

$$x = \frac{-3 \pm \sqrt{3^2 - 4(2)(0)}}{2(2)} = \frac{-3 \pm \sqrt{9}}{4}$$

$$\#25 \ \& \ \#27 \quad b=0 \text{ for both problems}$$

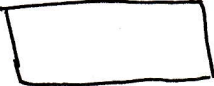
# HW 7 - Hints and partial solutions

## Section 9.4

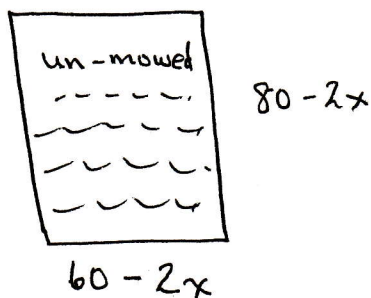
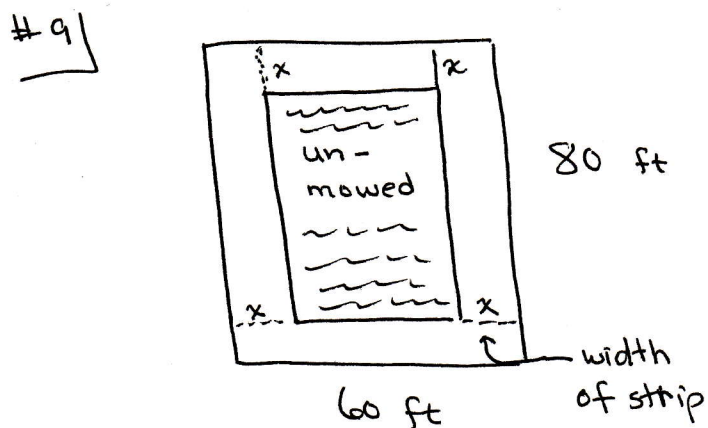
#1) Computer A  $x-3$   $t=2$   
Computer B  $x$

$$\left(\frac{1}{x-3} + \frac{1}{x}\right) 2 = 1$$

#3) Roofer:  $x-6$   $t=4$   
Assistant:  $x$

#5)  width:  $x$

length:  $2x+4$   $\rightarrow$  twice the width  
by 4 feet



$$\text{Area of unmowed} = \frac{1}{2} (\text{Area of entire lawn})$$