

51.4  $2x^2 + 23x + 6 = 0$

$a=2, b=23, c=6$

$b^2 - 4ac = (-23)^2 - 4(2)(6) = 529 - 48 = 481$

$\sqrt{481} \approx 21.93$

$x = \frac{-23 \pm 21.93}{2(2)} = \frac{-23 \pm 21.93}{4}$

$x = \frac{-23 + 21.93}{4} = \frac{-1.07}{4} = -0.2675$

$x = \frac{-23 - 21.93}{4} = \frac{-44.93}{4} = -11.2325$

Factorization:  $2x^2 + 23x + 6 = (2x+3)(x+2)$

Feb 5-3:22 PM

$21x^2 + 23x + 6$

$(21)(6) = (7)(3)(3)(2)$

$21x^2 - 9x - 14x + 6$

$3x(7x-3) - 2(7x-3)$

$(7x-3)(3x-2)$

Feb 5-3:42 PM

31  $\frac{.0025(200)}{(.25)^2}$

$= \frac{.05(2)}{(.25)^2} = \frac{.05(2)}{.0625} = 1.6$

33  $\frac{.05007}{.235} \left( \frac{100}{100} \right)$

$= \frac{243 - 223}{x-2} = \frac{2x-22}{x-2} = \frac{2(x-11)}{x-2}$

Feb 5-3:45 PM

40  $(-5)^2 = \frac{1}{(-5)^2} = \frac{1}{25}$

$\$1.6$   $\frac{\#23?}{4}$

STAPLE?

$.0164 \text{ l} = 1 \text{ cubic inch} = 1 \text{ in}^3 \Rightarrow$

$\frac{.0164 \text{ l}}{1 \text{ in}^3} = 1$

#2 Ford has 4.9 l engine, what's the cubic inch displacement? (to nearest in<sup>3</sup>)

$4.9 \text{ l} = (4.9 \text{ l}) \left( \frac{1 \text{ in}^3}{.0164 \text{ l}} \right)$

$= \frac{4.9}{.0164} \text{ in}^3$

$\approx 299 \text{ in}^3$

4.9 / .0164 = 298.7804878

Feb 5-3:54 PM

#6 Fews Wheel has circumference of 518 ft. One trip takes 40 s. How fast are you flying thru the air? What's your average speed? (miles per hour to nearest 1/10)

$\frac{518 \text{ ft}}{40 \text{ s}} = 12.95 \frac{\text{ft}}{\text{s}}$

12.95 ft/s  $\left( \frac{1 \text{ mi}}{5280 \text{ ft}} \right) \left( \frac{60 \text{ s}}{1 \text{ min}} \right) \left( \frac{60 \text{ min}}{1 \text{ hr}} \right) \approx 8.8 \frac{\text{mi}}{\text{hr}}$

$(12.95 \frac{\text{ft}}{\text{s}}) \frac{60 \frac{\text{min}}{\text{hr}}}{88 \frac{\text{ft}}{\text{s}}} = 8.8 \frac{\text{mi}}{\text{hr}}$

518/40 = 12.95  
12.95\*60\*60/5280 = 8.829545455  
12.95\*60/88 = 8.829545455

Feb 5-4:04 PM

#13 Fish oil has 80 pills. Each pill has 30 mg of B-1. How much B-1 in the bottle?

$(80 \text{ pills}) \left( \frac{30 \text{ mg B-1}}{1 \text{ pill}} \right) = 2400 \text{ mg.}$

$3 \text{ } 8 \text{ } 2 \text{ } 7 \text{ } 5 \text{ } 6 \text{ } 2 = 3.827562 \times 10^6$

Feb 5-4:12 PM

30  $(4 \times 10^8)(1 \times 10^6)$   
 $= (4)(1)(10^8)(10^6)$   
 $= (4)(1) \times (10^8)(10^6)$   
 $= 4 \times 10^{14}$

$(3.4 \times 10^2)(4.5 \times 10^{-6})$   
 $(3.4)(4.5) \times (10^2)(10^{-6})$   
 $= 15.30 \times 10^{-2-6}$   
 $= 15.30 \times 10^{-8}$   
 $= 1.530 \times 10^{-7}$

$(\frac{10}{10})(15.30 \times 10^{-8})$   
 $= \frac{15.30}{10} \times (10^{-8})(10)$  Divide & Multiply by 10

$(\frac{a^b}{a^c})(a^d)$   
 $= a^{b+c}$

$(\frac{a^b}{a^c})^d = a^{b \cdot d}$

$\begin{array}{r} 4.5 \\ 3.4 \\ \hline 15.30 \\ 15.30 \end{array}$

Feb 5-4:19 PM

~~8.4 x 10~~

$\frac{4.5}{9} = .5$

40  $\frac{4.5 \times 10^{-8}}{9 \times 10^{-4}} = \frac{4.5}{9} \times 10^{-8-(-4)}$   
 $= .5 \times 10^{-4}$   
 $= 5 \times 10^{-4} \cdot 10^{-1}$   
 $= 5 \times 10^{-5}$

My Thing  $\frac{(7 \times 10^6)(5 \times 10^{-4})}{1.4 \times 10^{-3}}$

$\frac{35}{1.4} = 25$

$= \frac{(7)(5)}{1.4} \times 10^{6-4+3}$   
 $= 25 \times 10^5$   
 $= 2.5 \times 10^6$

$\frac{25}{10} \times 10^5 \times 10$

Feb 5-4:29 PM

$x^2 - 7x - 11$   
 $a=1, b=-7, c=-11$   
 $b^2 - 4ac = (-7)^2 - 4(1)(-11)$   
 $= 49 + 44$   
 $= 93$

$x = \frac{7 \pm \sqrt{93}}{2}$

So,  $x^2 - 7x - 11 = (x - \frac{7+\sqrt{93}}{2})(x - \frac{7-\sqrt{93}}{2})$

3 93  
31

Feb 5-4:39 PM

$= x^2 - (\frac{7-\sqrt{93}}{2})x - (\frac{7+\sqrt{93}}{2})x + (\frac{7+\sqrt{93}}{2})(\frac{7-\sqrt{93}}{2})$   
 $= x^2 - \frac{7}{2}x + \frac{\sqrt{93}}{2}x - \frac{7}{2}x - \frac{\sqrt{93}}{2}x - 11$   
 $= x^2 - 7x - 11$

$(\frac{7+\sqrt{93}}{2})(\frac{7-\sqrt{93}}{2})$   
 $= \frac{1}{4} (7+\sqrt{93})(7-\sqrt{93})$   
 $= \frac{1}{4} (a+b)(a-b)$   
 $= \frac{1}{4} (a^2 - b^2)$   
 $= \frac{1}{4} (7^2 - (\sqrt{93})^2)$   
 $= \frac{1}{4} (49 - 93)$   
 $= -\frac{1}{4} (44)$   
 $= -11$

Feb 5-4:56 PM

Special Binomial Squared

$x^2 - 10x + 25$   
 $a=1, b=-10, c=25$   
 $b^2 - 4ac = (-10)^2 - 4(1)(25)$   
 $= 100 - 100 = 0$   
 Discriminant is zero!  
 Square of a binomial.

$(x - 5)^2 = (x-5)(x-5)$   
 $= x^2 - 5x - 5x + 25$   
 $= x^2 - 10x + 25$   
 Since 10, 5, 5 odd, 2, 2, 25, 27

$x = \frac{10 \pm \sqrt{0}}{2}$   
 $= \frac{10}{2} = 5$

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

PRACTICE TEST ONLINE  
 BY FRIDAY

Feb 5-4:49 PM