

Angela 8

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2-27

Math 71E 2013 December

44, 45, 48, 46, 51

46)  $a^2 b = 1$  solve for  $a$

$$a^2 = \frac{1}{b}$$

$$a = \sqrt{\frac{1}{b}} = \left(\frac{1}{b}\right)^{1/2} = \frac{\sqrt{1}}{\sqrt{b}} = \frac{1}{\sqrt{b}}$$

$$\left(\frac{a}{b}\right)^x = \frac{a^x}{b^x}$$

$$(ab)^x = a^x b^x$$

$(ab) (ab) (ab) \dots (ab)$   
x of these

Proof  $\Rightarrow$  Then there are  $x$   $a$ 's and  $x$   $b$ 's  $= a^x b^x$

$$\left(\frac{a}{b}\right)^x = \left(a \cdot \frac{1}{b}\right)^x = a^x \cdot \left(\frac{1}{b}\right)^x = \frac{a^x}{b^x}$$

48)  $x=1$   $\frac{7-x}{2} = 3$

Both are ints ✓

$7-x$  is even iff  $x$  is odd (odd + odd = even)

If  $7-x$  is even, then  $\frac{7-x}{2}$  is an integer

51)

$$V = V_0 (1-r)^t$$

$$\frac{V}{V_0} = (1-r)^t$$

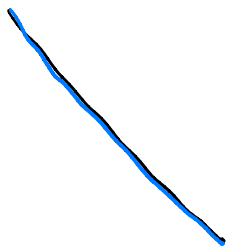
No need for log

$$\sqrt[t]{\frac{V}{V_0}} = 1-r$$

$$-\sqrt[t]{\frac{V}{V_0}} = r-1$$

$$r = 1 - \sqrt[t]{\frac{V}{V_0}}$$

59)



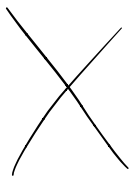
$$\begin{aligned} 8x - 6y &= 12 \\ 12x - 9y &= 18 \end{aligned}$$

$\times^{3/2}$        $\times^{3/2}$

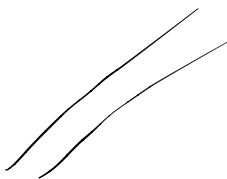
These 2 equations need to be equal

$$a = 6 \cdot \frac{3}{2} = 9$$

System: solution is #intersections



1 solution



0 solutions

(same line)

 $\infty$  solutions

44)

G

$$(x+3)^2 - x^2 = x^2 + 6x + 9 - x^2 = 6x + 9$$

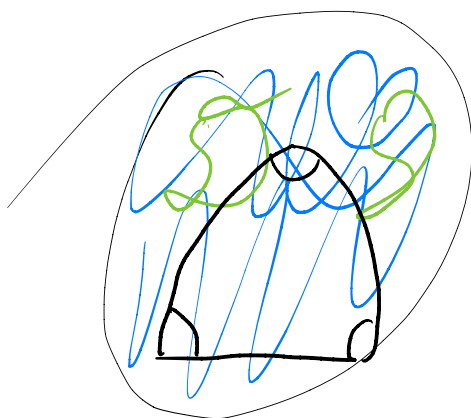
37)

$$2(120) + 2(80) = 240 + 160 = 400$$

D

Sum of interior angles of polygon  $= 180^\circ(n-2)$   
 $n$  is #sides

Angle sum of polygon is  $540^\circ$



On a sphere, triangle's  
angle sum  $> 180$