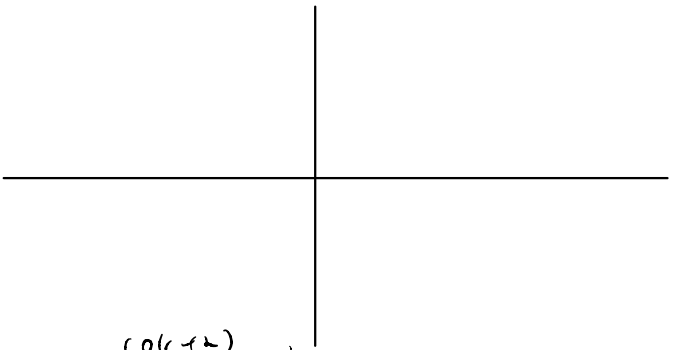
Claudia

2-6-22 74th English + 74th Math

42) J



43) $i^0 = 1$

$i^1 = i$

$i^2 = -1$

$i^{(0k+2)} = i^2$

You could think or really hard or just plug in

54)

$\log_{10}(a) = b$

$10^b = a$

$a > 0$

Domain of log is

$x > 0$

$a = x^2 - 4x + 3 > 0$

$(x-3)(x-1) > 0$

$4^2 - 4(4) + 3$

$16 - 16 + 3 > 0$ K

$(-1)^2 - 4(-1) + 3$

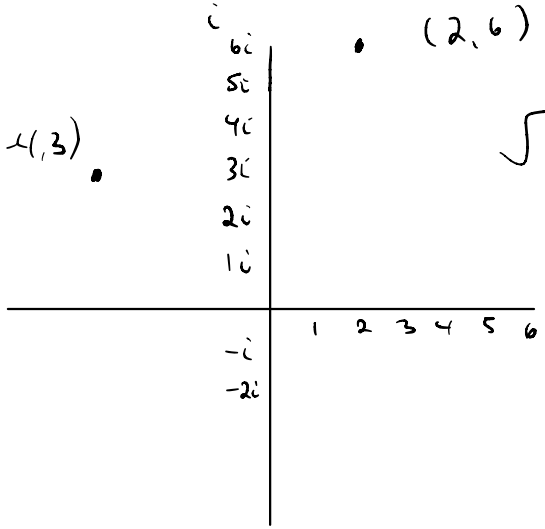
$1 + 4 + 3 > 0$

55) main diag, off diag

$\det\begin{pmatrix} a & b \\ c & d \end{pmatrix} = ad - bc$

$\begin{pmatrix} 8 & 3 \\ -5 & -2 \end{pmatrix} = -16 - (-15) = -1$

57)

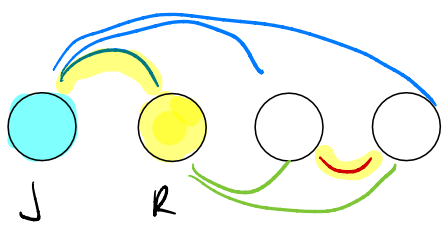


$\sqrt{(2-(-4))^2+(6-3)^2}$

60) 2π $\quad C = 2\pi r = 2\pi(1)$

$(\frac{1}{4}-4\pi)^2$

58) Math 2018 December BOS



6 pairs you can choose

$\frac{2 \text{ lines}}{6 \text{ total}}$ $\quad {}_nC_r = \binom{n}{r} = \frac{n!}{r!(n-r)!}$

$= \binom{n}{n-r}$ $\quad {}_nP_r = \frac{n!}{(n-r)!}$

$\binom{5}{3} = \binom{5}{2}$

$\binom{5}{4} = \binom{5}{1}$

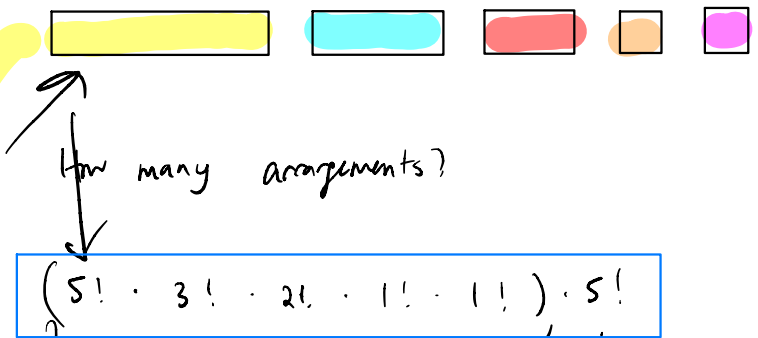
5 math

3 sci-fi

2 cook books

1 environment

1 miscellaneous



How many arrangements?

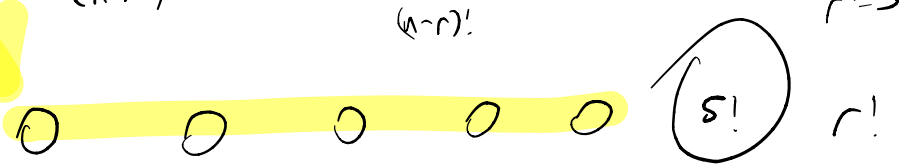
$(5! \cdot 3! \cdot 2! \cdot 1! \cdot 1!) \cdot 5!$

order small groups

order large groups

$nCr = \binom{n}{r} = \frac{n!}{r!(n-r)!}$

$= \binom{n}{n-r}$ $\quad nPr = \frac{n!}{(n-r)!}$



59) $c^2 = a^2 + b^2 - 2ab\cos C$

$x^2 = 10^2 + 14^2 - 2(10)(14)\cos ?$

10^2 ..... $\cos(34^\circ)$

A

$$(x-4)^2+(y-3)^2=2^2$$

$$\frac{(x-4)^2}{2^2}+\frac{(y-3)^2}{2^2}=1$$