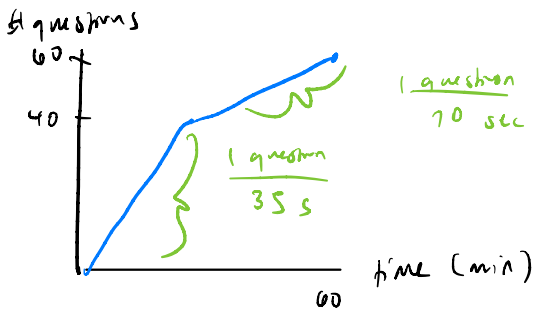
Angela & Andrew

2-20-22 Math 2017 December A10

60 questions, 60 minutes

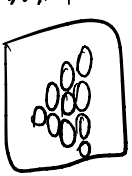
1 question/min



tl;dr bring questions that take too long to class

22) Don't check the middle numbers check options

23)



$\pi\left(\frac{2.25}{2}\right)^2$

One pin 1.27π

Ten pins $= 12.7\pi \approx 40$

A) 40

Want !! Pin !! read carefully

40) Ana: $2/5$

Amy: $1/3$

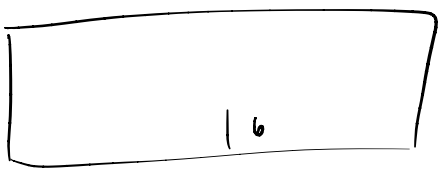
Rusen: $1 - 2/5 - 1/3 = 4/15 \Rightarrow$ If $4/15$ takes 2 hours

$1/1$ takes $2 \cdot 15/4 =$ 7.5 hours

43) $\frac{2}{3} - \frac{1}{4}$ $\quad \frac{8}{12} - \frac{3}{12} = \frac{5}{12}$

$$\frac{12\left(\frac{x}{3} + \frac{1}{2}\right)}{5} = \frac{4x+6}{5}$$

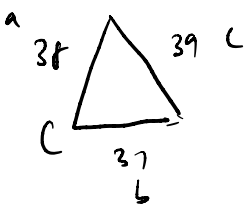
~~28)~~

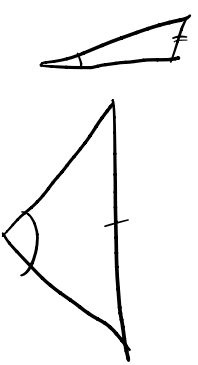


26

4a) $c^2 = a^2 + b^2 - 2ab\cos C$

Figure out whether you want c or C





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

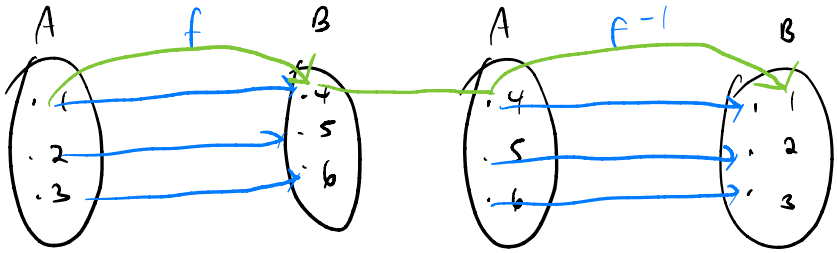
$$-\frac{c^2 - a^2 - b^2}{2ab} = \cos C$$

$$\cos^{-1}\left(-\frac{c^2 - a^2 - b^2}{2ab}\right) = \cos^{-1}(\cos(C)) = C$$

$$C = \cos^{-1}\left(-\frac{c^2 - a^2 - b^2}{2ab}\right)$$

B

$f^{-1}(f(x)) = x$



$f: A \to B$ $\qquad$ $f^{-1}: A \to B$

$f^{-1}(f(1))$

33) Airplane horizontal
$x = \cdots$ vertical

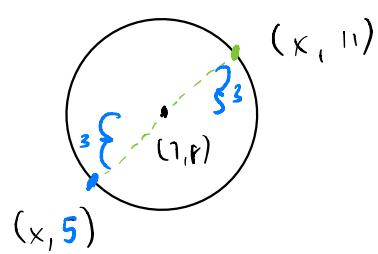
C $\qquad$ $A: (0, 0)$

be careful, A might not start at 0

52) $n=1 \quad s_1 = 3$
$n=2 \quad s_2 = 9 = 2(3) + 2 + 1$
$n=3 \quad s_3 = 22$
$n=4 \quad s_4 = 49$

s_0 start at s_0 or
s_1 s_1?

54) Geometry: Always draw diagram



Even for hard questions, you're always 1-2 small steps from answer, attempt each question fully.

60) K Graphing imaginary solutions

Not necessary and later

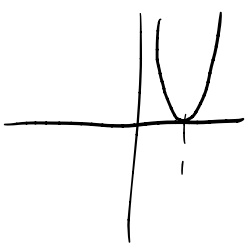
To get actual roots, $x+1 \overline{)4x^3-2x^2+x+7}$

solutions to polynomial = degree (highest power) of polynomial

(hidden) (*)

(imaginary)

$(x-1)^2$ How many solutions? 2



$(x-1)(x-1)$

$x=1 \quad x=1$

(*)

54) expected value average/mean

$\{1, 2, 2, 3, 3, 3, 4, 4, 4, 4\}$

$\frac{1+2+2+3(3)+4(4)}{10} = 3$

Flip a coin H = 3 pts T = 0 pts

Expected value of a toss? 1.5 pts per toss

59) Be aware of when something might be wrong

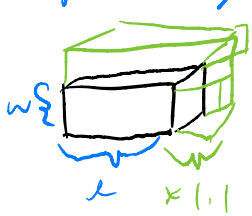
Do sanity checks

$V = lwh$

$= 1.1l \cdot 1.1w \cdot h$

$1.1 \cdot 1.1 = 1.21$

21%



How much does volume increase when just $l \to 1.1l$ 1.1×