Larry

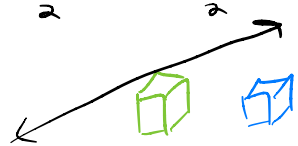
2-5-2022 Math 2020 July Col

60) $c^2 = a^2 + b^2 - 2ab\cos C$ $\quad C = 110^\circ$

Law of Cosines

Law of Sines $\quad \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

$\frac{n(n+1)}{2} = \frac{9(10)}{2} = 45$



59) $9+8+7+6+5+4+3+2+1 = 45$

54) 11 12 13 14 22 23 / 36
21 31 41 32

distinguishable
vs indistinguishable

10 136 → 518

(1,1) (1,2)
(2,1)

53)

$27^{n^2} = 9^{5n-4}$

$(3^3)^{n^2} = (3^2)^{5n-4}$

$3^{3n^2} = 3^{10n-8}$

$3n^2 = 10n - 8$

$3n^2 - 10n + 8 = 0$ → calculator

52) $x = \frac{\text{ten number sum}}{10}$

$10x =$ ten numbers

$8y =$ 8 numbers (highest/lowest removed)

$10x - 8y =$ highest and lowest sum

$$\frac{1}{8} \qquad \frac{8}{10}(5)$$

46) H

1 2 3 4

J $\frac{3}{5}$ $^3/_4$ biggest fraction

K $\frac{5}{9}$

43, 44 45, 47, 4

$4C2 = 6$

$\binom{4}{2} = 6$

Group 2 and the other 2 are grouped together.

P(blue, green are paired)

$\frac{2}{6}$

53) (A) with replacement $\frac{1}{2} \cdot \frac{1}{5}$ without replacement

43, 44 45, 47, 48

40) $|x|^2 - |x| - 2 = 0$

$x^2 - |x| - 2 = 0$

$x^2 - x - 2$

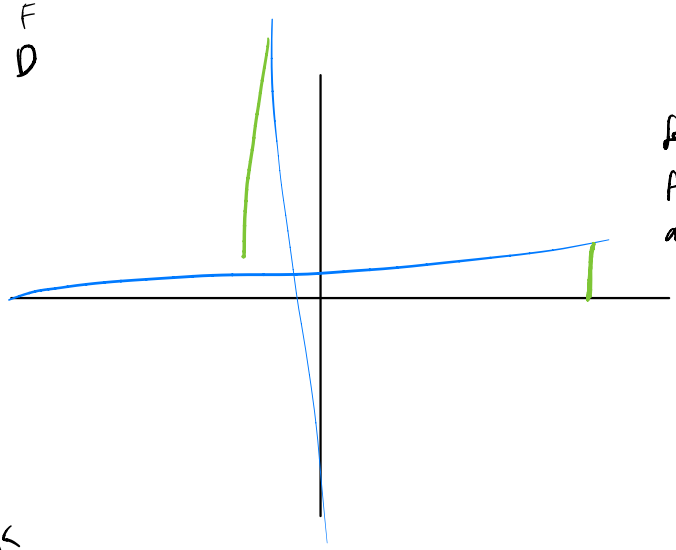
$(|x| - 2)(|x| + 1)$

$x = 2, -2$

44) F

45) D

47)



for perpendicular slope, flip y and x (reciprocal) and negate

48) K

50) J - irrational

60) $\log_{(x+3)}(x^2+3) = 2$

$(x+3)^2 = x^2+3$

$x^2 + 6x + 9 = x^2 + 3$

$6x = -6$

$x = -1$