Math
43, 42, 45, 44, 4F, 46, 51

51)
    5:2   3:2   5:2   3:2
                     $\times \frac{3}{2}$

    15:6   6:4

                7.5 : 3 : 3 : 2

45)
    4.5

$$a\begin{bmatrix} 2 & 6 \\ 1 & 4 \end{bmatrix} = \begin{bmatrix} x & 27 \\ y & 2 \end{bmatrix}$$

$$a = 4.5$$

                   $x + 2 = 4.5(2 + 4)$

57)

5F)   K

4F)   Use calculator → decimal, then check logical answer choices

     Check   6 $\dfrac{4\sqrt{3} + 2\sqrt{2}}{\sqrt{6}}$ and if not that, K $\dfrac{8}{\sqrt{6}}$

$$\frac{4}{2} + \frac{1}{3} = \frac{7}{6}$$ (answer choice may be simplified)

42)   K

43)   PE $\dfrac{\frac{1}{2}axy + a}{12y}$ vs. $\dfrac{\frac{1}{2}2axy + 2a}{12y} = \dfrac{2\left(\frac{1}{2}axy + a\right)}{12y} = 2p$

t^2 is the time to do a task

If t increases by factor of 10, how much longer does it take to do the task?

$$(10t)^2 = 100t^2$$

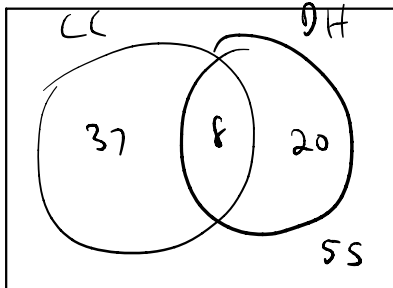$$100t^2 \quad vs \quad t^2$$

If t increases by factor of 100, how much longer does it take to do the task?

10000× longer

$n\log(n)$ better than n^2

Good sorting algorithms on good inputs usually $n\log(n)$

55)

CC   OH

37   8   20

SS

inclusion
-exclusion
principle

useful in probability

$45 + 28 = 73$

$73 - \boxed{8} = 65$

41)

$x=6$

$x=6.5$

$x = 7.5$