BC p. 558 # 45

area inside one petal of the four-petaled rose $r = \cos 2\theta$

$$A = 2\cdot\frac{1}{2}\int_0^{\pi/4} \cos^2 2\theta \, d\theta$$

BC 86. 2008 On the graph of $y = f(x)$, the slope at any point (x, y) is twice the value of x. If $f(2) = 3$, what is the value of $f(3)$?

~~(A)~~ 6 ~~(B)~~ 7 (C) 8 ~~(D)~~ 9 ~~(E)~~ 10

FTC: $f(3) = f(2) + \int_2^3 f'(x)\,dx$

$= 3 + \int_2^3 2x\,dx$

$= 3 + x^2\Big|_2^3$

$= 3 + 9 - 4 = 8$

Section I. MC
A (no calculator) #1-28 (28) 55 min
B (calculator) #76-92 (17) 55 min

Section II. FR
A (calculator) #1-2 30 min
B (no calculator) #3-6 60 min

#47 inside one loop of the lemniscate $r^2 = 4\cos 2\theta$

$$r = \pm 2\sqrt{\cos 2\theta}$$

$$r_1 = 2\sqrt{\cos 2\theta}$$

$$r_2 = -2\sqrt{\cos 2\theta}$$