DSE 2008 Answer Key
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1.(d) S1 and S3 (Fischer's Index is ideal, it satisfies only these two)

2.(b) $(0.1)(0.99)^9$

3.(d) The sample standard deviation is one third its original value

4.(c) III and IV

5.(c) $g(y) = 2f(\sqrt{y})$ for any $y = 1, 4, \ldots, 400$ and $g(y) = 0$ otherwise

6.(b) The goods are perfect substitutes

7.(c) price of good x is less than or equal to price of good y

8.(c) price must be higher in the market with lower price elasticity of demand

9.(d) 5 and 10

10.(d) 1

11.(b) becomes flatter

12.(b) it leads to lower level of output in the equilibrium

13.(c) the steady state rate of growth remains unchanged

14.(c) expected currency depreciation must equal the currency differential plus the risk premium

15.(c) 1, 3 and 4

16.(d) g is a linear function, f is not linear

17.(b) $-(yx^{y-1} + z^x \ln(z))/(xz^{x-1} + y^z \ln(y))$

18.(c) a constant

19.(a) will change the sign of det A

20.(e) Not sure

21.(b) Rs. 3000 to 4000

22.(c) 0.95 and 0.55

23.(a) A unit change in X is associated with a 1.25 unit change in Y, and a one unit change in Y is associated with a 0.6 unit change in X

24.(c) The probability that the life of the tyre will be between 336.84 and 363.16 days is 90%

25.(c) Given H_A: $\pi \neq 0.1$, we reject the null at the 10% level of significance, and the probability of error type I of this test is 0.1

26.(a) If H_A: $\mu_1 - \mu_2 \neq 0$ we reject the null hypothesis at the 15%, 13%, 12% and 8% level of significance

27.(c) The chain base price indices with 2000 as base year are $P_{01} = 148.3$, $P_{02} = 154.2$, and $P_{03} = 144.9$

28.(d) 80/215

29.(b) only II and III

30.(c) 15/23

31.(a) $(x_2, y_2) = (1 - x_1, 1 - y_1)$ for all $x_1, y_1 \in [0, 1]$

32.(d) Pareto Efficient

33.(b) $(x_1, y_1) = (1, 1)$ and $(x_2, y_2) = (1, 0)$

34.(c) $(p_x, p_y) = (1, 1)$

35.(c) a subsidy of 1 to person 1 and a tax of 1 on person 2

36.(a) Ms A's choices violate the weak axiom of revealed preference

37.(c) 5, 5, 2/5

38.(d) $5K^2/(K^2 + F^2)$

39.(c) $10K^2F^2/(K^2 + F^2)$

40.(a) $C^*(x) = 2 + 2x$, if $x \in [0, 2]$, $4 + x$, if $x > 2$

41.(b) $L^d = \bar{K}(A\alpha)^{1/(1-\alpha)} \left(\dfrac{W}{P}\right)^{1/(\alpha-1)}$

42.(a) shifts up

43.(a) $L^s = \left(\dfrac{\bar{L}\left(\frac{W}{P}\right)^{\frac{\beta}{1-\beta}}}{1 + \left(\frac{W}{P}\right)^{\frac{\beta}{1-\beta}}}\right)$

44.(b) shifts down

45.(d) $W/P = [2 + 2\sqrt{2}]^{1/2}$

46.(c) vertical

47.(c) it increases by $\dfrac{b}{b\left[1 - c(1-\tau)\right] + ad}$ units

48.(d) it decreases by $\dfrac{b\left[1 - c(1-\tau)\right]}{b\left[1 - c(1-\tau)\right] + ad}$ units

49.(c) it increases by $\dfrac{[1 - c(1-\tau)]\left[\bar{M}/\left(\bar{P}\right)^2\right]}{b\left[1 - c(1-\tau)\right] + ad}$ units

50.(b) downward sloping

51.(d) the rows of A are linearly independent

52.(a) strictly convex

53.(c) exactly one solution

54.(a) If Player 2 plays appropriately, he can win regardless of how 1 actually plays

55.(d) $\lim_{n\to\infty} f_n(x)$ exists for all but a finite set of real numbers

56.(c) a constant sequence

57.(b) a set having a single point

58.(a) e^π

59.(c) is discontinuous at $x = 0$

60.(c) are linearly dependent