# Problem Set 3: Answer Key

## ***Multiple Choice:***

1) B
2) C
3) C
4) B
5) A
6) D
7) D
8) A
9) D
10) A
11) C
12) D
13) B
14) C
15) B
16) A
17) C
18) C
19) A
20) C

## ***Calculations:***

21) Real GDP per person in 2004 = 11,610,000 / 2,700 = 4,300
    Real GDP per person in 2005 = 10,000,000 / 2,500 = 4,000
    So growth rate of real GDP per person between 2004 and 2005
    = 100* [(4,300 – 4,000)/4000] = 7.5%

22) Productivity in 2004 = 5,000,000 / 10,000 = 500 units per hour.
    Productivity in 2005 = 4,800,000 / 8,000 = 600 units per hour.
Hence productivity increases by 20% between 2004 and 2005.
➔ 100*[(600 – 500) / 500]

23) Real GDP per person in 1987 was $6,435,000/243= about $26,481 and income per person in 2005 was $11,092,000/296.6 = about $37,397. Income per person grew by 100*[(37,397 - 26,481)/26,481] = about 41.2 percent.

***Short Essays:***

24) The argument that poor countries will tend to catch up with rich ones is based on the idea that another unit of capital will increase output more in a country that has little capital than one that has much capital. So, for a given share of GDP devoted to investment, a poor country will grow faster than a rich one.
This argument assumes that other things are the same, but share of GDP invested may be lower in a poor country and the productivity of investment may be less. A politically unstable environment where property rights are unprotected or not secure tends to discourage investment. A country that has limited trade because of legal restrictions or geography cannot focus on producing what it produces best and so has lower productivity. To get the most out of investment, or even simply to use some types of new investment, requires having workers who have acquired some basic human capital.

25) K/L (physical capital per worker), H/L (human capital per worker), N/L (natural resources per worker), A (technological progress).

Policies to boost productivity by increasing K/L are

- (i) to encourage savings and investment
- (ii) to encourage investment from abroad (foreign direct investment or foreign portfolio investment)
- (iii) to control population growth