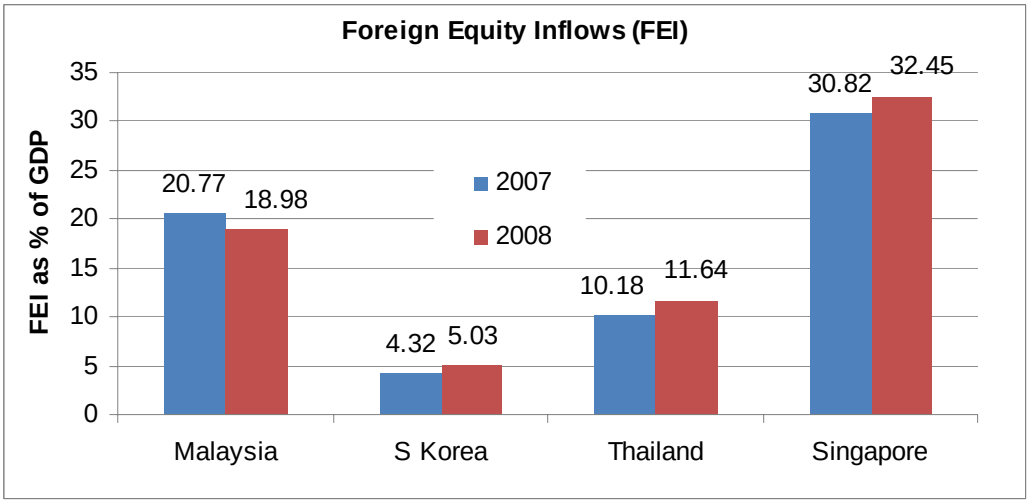



**Q1** Which country has the largest percentage change in FEI between 2008 and 2007?

Malaysia **S Korea** Thailand Singapore

*Relative change in FEI for Malaysia (20.77 – 18.98) / 20.77 = 8.62 %*

*Relative change in FEI for S Korea (5.03 – 4.32) / 4.32 = **16.44** %*

*Relative change in FEI for Thailand (11.64 –10.18) / 10.18 = 14.34 %*

*Relative change in FEI for Singapore (32.45 –30.82) / 30.82 = 5.29 %*

**Q2** In 2008 Thailand's GDP is 10% higher than Malaysia's GDP. By what percent does Malaysia's absolute Foreign Equity Inflow exceed that of Thailand for 2008?

36.6 % 32.8 % **48.2 %** 42.8 %

*Absolute FEI = FEI x GDP / 100*

*Absolute FEI for Malaysia = 18.98 x GDP of Malaysia / 100*

*Absolute FEI for Thailand = 11.64 x GDP of Thailand / 100*

*= 11.64 x 1.1 times GDP of Malaysia / 100*

*Absolute FEI for Malaysia / Absolute FEI for Thailand = 18.98 / (11.64 x 1.1) = **1.482***

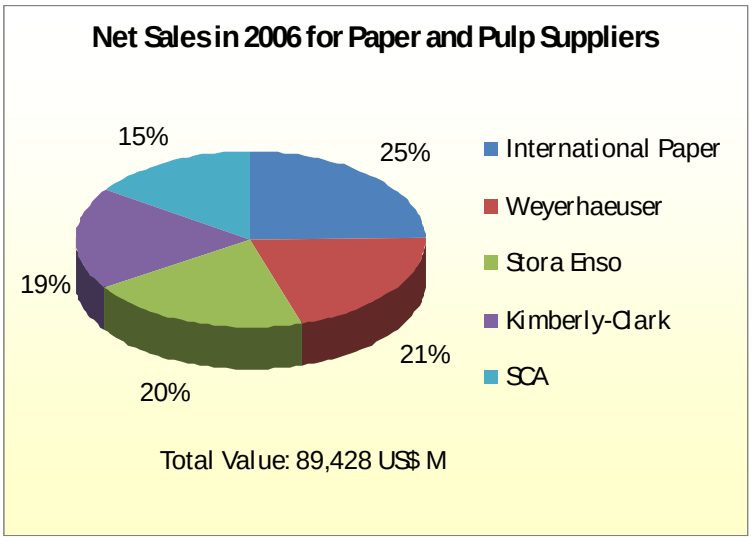
**Q3** If the GDP of Singapore in 2007 was US$161,350 million and it grew by 7.5% from 2007 to 2008, what is the absolute FEI (in millions of USD) for Singapore in 2008?

**56,285** 52,360 49,730 48,390

*GDP of Singapore for year 2008 = 1.075 x 161,350 m USD = 173,450 m USD*

*Absolute FEI = FEI x GDP / 100*

*Absolute FEI of Singapore for year 2008 = 32.45 x 173,450 / 100 =* ***56,285*** *m USD.*




**Q4** By how many millions of US$ did net sales of Weyerhaeuser exceed those of Kimberly-Clark for 2006?

1,708.56 **1,788.56** 1,888.65 2,989.73

*Share of Weyerhaeuser is 21 % and for Kimberly-Clark it is 19 %. Difference is 2 % of total sales (0.02 x 89,428) = 1,788.56 m US$.*

**Q5** For 2007 net sales of International Paper declined by 5%, net sales of Stora Enso increased by 8%, net sales of SCA grew by 16.5% and for the rest remained constant. To what percentage did Kimberly-Clark's market share decline in 2007?

17.5 % 18.0 % **18.5 %** No Decline

*Net sales of International paper for 2007 = 0.25 x 0.95 = 0.2375*

*Net sales of Stora Enso for 2007 = 0.20 x 1.08 = 0.216*

*Net sales of SCA for 2007 = 0.15 x 1.165 = 0.17475*

*Weyerhaeuser and Kimberly-Clark remained constant at 0.21 and 0.19*

*Kimberly-Clark's share = 0.19 / (0.2375+0.216+0.17475+0.21+0.19) = 0.185 or **18.5 %***

**Q6** If the total quantity sold by Stora Enso during 2006 was 5,632,000 tons, what was the average price in US$ per kg of paper and pulp supplied by Stora Enso?

**3.18** 4.26 3.69 4.05

Net sales = 89,428 x 0.20 US$ M = 17,885 US$ M

Average price = 17,885 US$ M / 5,632,000 tons = **3.18 US$ per kg.**

**Motor Vehicle Production - 2008 (Top 10 manufacturers)**

| Rank | Group | Cars | LCV | HCV | Heavy Bus |
|---|---|---|---|---|---|
| 1 | GM | 5,708,038 | 3,156,888 | 43,838 | 17,396 |
| 2 | Toyota | 6,800,228 | 1,049,345 | 122,569 | 63,868 |
| 3 | Ford | 3,800,633 | 2,386,296 | 81,264 | 0 |
| 4 | Volkswagen | 5,429,896 | 219,537 | 29,175 | 5,995 |
| 5 | Honda | 3,549,787 | 119,727 | 0 | 0 |
| 6 | PSA | 2,961,437 | 395,422 | 0 | 0 |
| 7 | Nissan | 2,512,519 | 570,136 | 134,874 | 5,843 |
| 8 | Chrysler | 710,291 | 1,834,299 | 0 | 0 |
| 9 | Renault | 2,085,837 | 406,633 | 0 | 0 |
| 10 | Hyundai | 2,231,313 | 966 | 145,120 | 0 |

**Q7** What would GM's Vehicle Production rank have been if it didn't produce any LCVs during 2008?

1 2 **3** 4

*Total production 2008:*
*GM 8,926,160, Toyota 8,036,010, Ford 6,268,193, Volkswagen 5,684,603, Honda 3,669,514, PSA 3,356,859, Nissan 3,223,372, Chrysler 2,544,590, Renault 2,492,470, Hyundai 2,462,677*

*Total production for GM without LCVs = 8,926,160 – 3,156,888 = 5,769,272 and it is less than Ford and greater than Volkswagen. Rank of GM would be **3**.*

**Q8** Which manufacturer has the highest share of HCVs in its total production of motor vehicles?

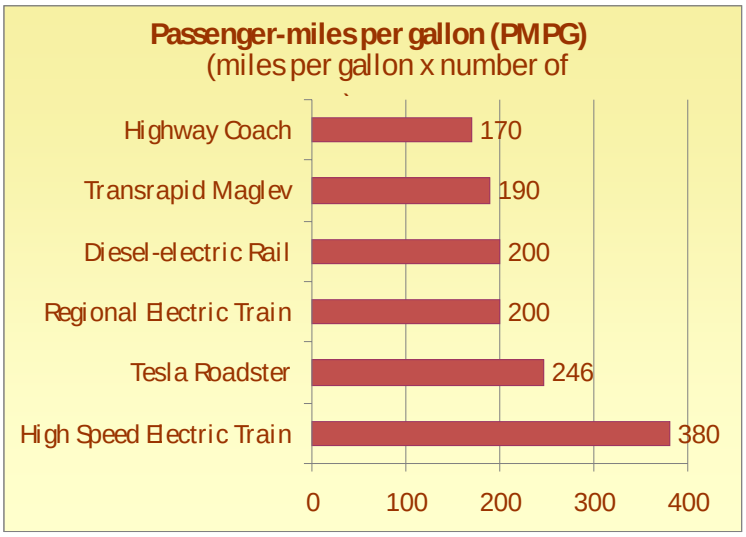
**Hyundai** Nissan Volkswagen Toyota

*Share of HCVs: Hyundai=145,120/2,462,677. Hyundai has highest production of HCVs and has least total production in this list. Hence has the highest share of HCVs in its total production. This could be done by inspection.*

**Q9** The cost of manufacturing one heavy bus is 12 times that for a car, and for one LCV it is twice that for a car. Approximately how many heavy buses can Chrysler manufacture if it diverts half of the funds from LCV production to heavy bus production?

305,717 917,150 182,588 **152,858**

*Cost of manufacturing a heavy bus is 6 times that of an LCV. Number of LCVs approx 1,834,300, half is 917,150. Number of heavy buses that can be produced from it will be 917,150/6 = 152,858 approx.*




**Q10** On average the passenger occupancy of Diesel-electric Rail is five times that of High Speed Electric Train. By what factor does the miles per gallon figure of High Speed Electric Train exceed that of Diesel-electric Rail?

9 **9.5** 8 8.5

*PMPG = miles per gallon (MPG) x number of passengers (P). MPG = PMPG/P.*

*For High Speed Electric Train MPG = 380/P, for Diesel-electric Rail MPG = 200/5P. The ratio = (380/P)/(200/5P) = 9.5*

**Q11** If the cost for any of these modes of transport is £5 per gallon, how much will it cost for 27 passengers to travel 120 miles, the first half being by Regional Electric Train and the second half by Highway cCoach?

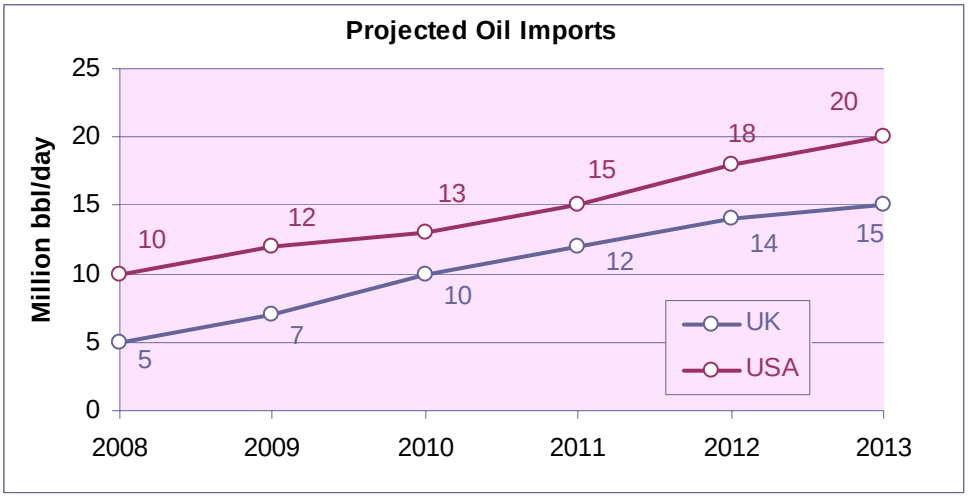
*£ 22.22* *£ 40.5* *£ 69.87* ***£ 88.15***

*PMPG = MPG x P, or miles (M) x passengers/gallons (G) so G = M x P/PMPG.*
*Cost = £ 5 x G, or 5 x(M x P) / PMPG*
*Regional Electric Train =5 x 60 x 27 / 200 = £ 40.5 and Highway Coach = 5 x 60 x 27 / 170 = £ 47.65.*
*Total = **£ 88.15**.*

**Q12** By 2020 passenger occupancy of Transrapid Maglev is expected to be 10 times the present value, and with technological advancements its MPG value is expected to increase by 33%. What will be the expected value of PMPG for Transrapid Maglev in 2020?

1,900 **2,527** 2,780 6,270

*PMPG = MPG x P, in 2020 PMPG = 1.33 MPG x 10 P = 13.3 times present value, or 13.3 x 190 = 2527.*




**Q13** What is the projected annual oil import (in m bbl) for both countries combined in 2011?

4,380 5,475 **9,855** Cannot say

*For year 2011 combined oil import is 12 + 15 = 27 m bbl/day and for whole year 27 x 365 = 9,855 m bbl.*

**Q14** If the UK's oil imports were projected to increase at 10% per year from 2010 onwards then what would the oil import (in m bbl) be for the first quarter of 2012?

**1,104** 1,260 1,800 1,908

*UK's oil import for 2010 10 m bbl/day, at 10% per year it will be 12.1 m bbl/day. For first quarter (3 months) of the year 2012 total oil import will be 1,104.1 m bbl (12.1x365/4)*

**Q15** Assuming the oil price to be $170 per bbl, by how much (in m $) did USA's oil import bill exceed that of the UK in 2013?

**310,250** 186,150 434,350 622,050

*For year 2013 USA's oil import (20 m bbl/day) exceeds that of UK (15 m bbl/day) by 5 m bbl/day. Total exceeded bill will be 5 x 170 x 365 = 310,250.*

| Operator skill level | Machine Tool | | | |
|---|---|---|---|---|
| | Milling | Hobbing | CNC milling | CNC Hobbing |
| 1 | 2 | 3 | 0 | 0 |
| 2 | 3 | 3 | 0 | 0 |
| 3 | 5 | 5 | 0 | 0 |
| 4 | 5 | 7 | 8 | 10 |
| 5 | 7 | 9 | 11 | 14 |

**Number of spur gears produced per hour by one labour working on one machine**

**Q16** There are three Milling and eight Hobbing machines available on a particular day. What is the maximum number of gears produced on that day if ten operators of skill level 4 (one operator per machine) work for seven hours?

**462** 602 528 Cannot say

*Maximum will be for the most people working on a Hobbing maching since this will produce 7 parts per hour and the Milling machine will produce only 5 parts per hour. However there are only eight Hobbing machines available, so fill the available Hobbing machines and place the remaining two workers on the Milling machines. So (8 x 7 x 7) + (2 x 5 x 7) =* ***462***

**Q17** A workshop has three operators for each skill level. What is the maximum difference possible for the number of gears produced per hour?

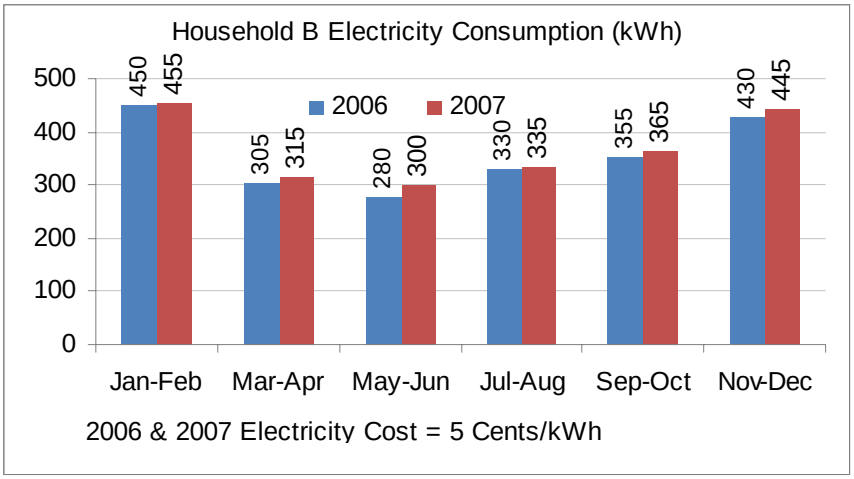
66 33 105 **39**

*Minimum production per hour will be for all operators working on milling machines, that is 3 x (2+3+5+5+7) = 66. Maximum will be from the Hobbing machine; 3 x (3+3+5+10+14) = 105. Maximum difference will be 105-66 =* ***39****.*

**Q18** How many days will two operators of skill level 1 working on Milling machines and four operators of skill level 5 working on CNC Milling machines working eight hours a day take to complete an order of 1920 spur gears?

3 10 **5** 6

*Number of gears produced per day = 2 x 2 x 8 + 4 x 11 x 8 = 384. For 1920 gears it will take* ***5 days****.*




**Q19** Household electricity is billed bimonthly. Which bimonthly bill showed the steepest increase in electricity consumption from year 2006 to year 2007?

Jan-Feb  Mar-Apr  **May-Jun**  Jul-Aug

*For May-Jun it is 300 – 280 = 20 kWH higher than any other bimonthly bill. This can be seen by inspection.*

**Q20** In 2006, Household B received a subsidy of 5 Cents/kWh towards its electricity bills. By what amount (Cents/kWh) would the subsidy have had to increase so that Household B paid the same annual electricity bill in 2007 as it did in 2006?

0.58  1.04  **0.44**  0.00

*Annual electricity bill of household for year 2006 is 2150 x 15 Cents and for year 2007 is 2215 x (rate) Cents. Rate to keep the bills same will be: 2150 x 15 =2215 x rate ==> rate = 2150 x 15 / 2215 = 14.56. The difference in rates will be caused by subsidy, 15 – 14.56 =* ***0.44*** *cents per unit.*

**Q21** Air conditioning is used in Household B from Nov to Feb inclusive and amounts to 20 percent of the electricity consumption for these months. If energy efficient air conditioning , consuming 25kWh of electricity per month of operation, is used then what will Household B's saving be in 2007?

$15  **$16**  $4.5  $6

*Electricity consumption from Nov to Feb is 900 units. Consumption by AC is 20 %, i.e. 180 units. Electricity consumption by energy efficient AC for four months will be 100 units. Saving will be 80 x 20 =* ***$ 16****.*

| Speed Limit (KMPH) | | | | | |
|---|---|---|---|---|---|
| **Road Type** | **Bike** | **Car** | **LCV** | **HCV** | **Cargo Truck** |
| **Alley** | **25** | **25** | **NA** | **NA** | **NA** |
| **Street** | **40** | **40** | **35** | **NA** | **NA** |
| **Parkway** | **50** | **45** | **40** | **40** | **30** |
| **Expressway** | **60** | **60** | **50** | **40** | **40** |
| **Highway** | **80** | **70** | **60** | **50** | **40** |

**Q22** A person travels by bike. He travels in the Alley for 5 km then on the Street for next 5 km, then he takes the Parkway for another 15 Km to reach his destination. What is the minimum time (in hrs) in which he can reach city his destination?

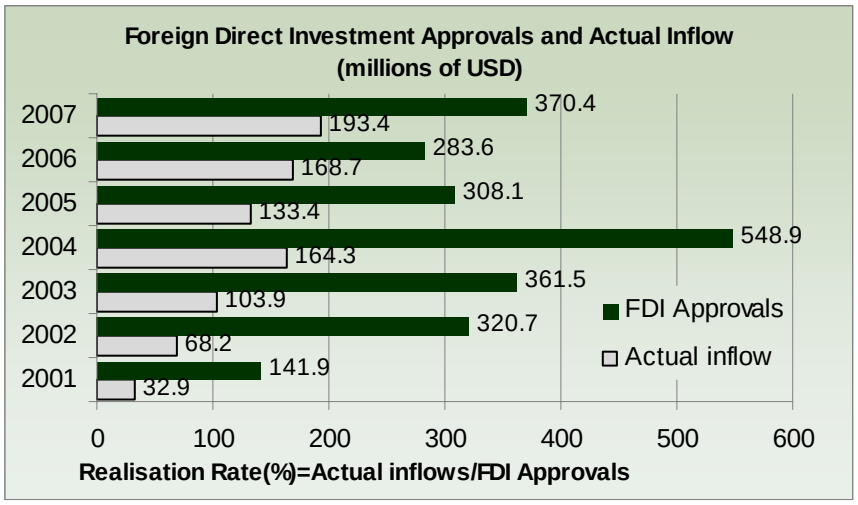
2.5 0.25 **0.625** 0.65

*For minimum time he has to drive at the speed limit. Time for 5 km Alley is 5/25 hr, for Street it is 5/40 hr, for Parkway it is 15/50 hr. Total time taken is 5/25 + 5/40 + 15/50 =* ***0.625 hr****.*

**Q23** Three transport companies A, B and C all operate a route comprising one-third Expressway and two-thirds Highway. Company A uses only LCV, B uses only HCV and C uses only Cargo Trucks. For a distance of 1200 km, what will be the ratio of shortest journey time between the three companies?

**32:39:45** 21:26:30 64:26:30 Cannot say

*Time taken by A will be 400/50 + 800/60 = 64/3 hr, time taken by B will be 400/40 + 800/50 = 26 hr and time taken by C will be 400/40 + 800/40 = 30 hr. ratio will be 64/3:26:30 or* ***32:39:45****.*




**Q24** Which years experienced a Realisation Rate above the 2001-2007 average Realisation Rate?

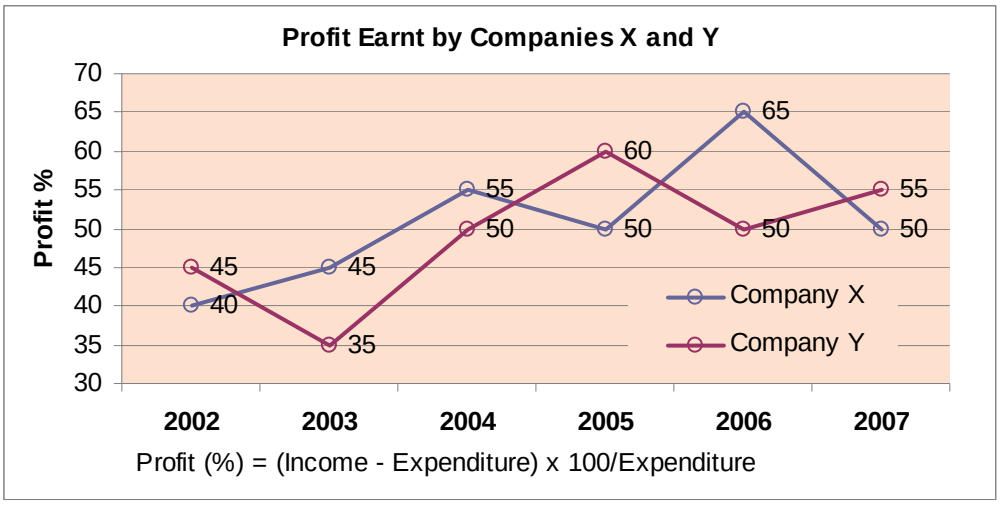
2004, 2005, 2006 2002, 2007 **2005, 2006, 2007** 2007

*Average realisation rate will be Total Actual inflows/Total FDI Approvals, for given years it will be 864.8/2335.1 = 37.03%. Realisation rate for 2001 is 32.9/141.9 = 23.18%, for 2002 it is 21.26%, 2003 - 28.74%, 2004 - 29.93%,* ***2005 - 43.30%, 2006 - 59.48%, 2007 - 52.21%****.*

**Q25** By how much (million USD) does the sum of Actual inflows for 2002 and 2004 differ from the sum of FDI Approvals for 2003 and 2005?

11.76 more 240.08 less 400.76 less **437.1 less**

*Sum of actual inflows in year 2002 and year 2004 is 232.5. Sum of FDI approvals in year 2003 and 2005 is 669.6. The difference is 669.6 – 232.5 = 437.1* ***millions of USD less****.*




**Q26** The incomes of the two companies X and Y in 2006 were in the ratio of 3:4 respectively. What was the respective ratio of their expenditure?

7:22 **15:22** 27:35 33:40

*From the formula given for profit (%) the formula for Expenditure will be* $\frac{Income}{\left(1+\frac{profit(\%)}{100}\right)}$. *The ratio of the expenditures of the two companies will be*

$$\frac{Income_X}{Income_Y}\frac{\left(1+\frac{profit(\%)_Y}{100}\right)}{\left(1+\frac{profit(\%)_X}{100}\right)}=\frac{3}{4}\frac{(1.50)}{(1.65)}=\frac{15}{22}.$$

**Q27** If the expenditures of Companies X and Y in 2002 were equal, and the total income of the two Companies in 2002 was £3.420 million, what was the total combined profit (in million £) of the two Companies in 2002?

£1,710 £1,200 **£1,020** None of these

*From the formula of Profit (%) the formula for income will be* $Expenditure\left(1+\frac{profit(\%)}{100}\right)$. *As the Expenditures are equal, the total income will be 3,420 =*

$$Expenditure\left(1+\frac{profit(\%)_X}{100}+1+\frac{profit(\%)_Y}{100}\right)$$

$= Expenditure(1+0.40+1+0.45) = Expenditure(2.85)$. *So the Expenditure is 3,420/2.85 = 1200 and the total expenditure will be 2 x 1200 = 2400. Profit = Income – expenditure. Total profit*

*of the two Companies would be = Total Income – Total expenditure = 3,420 – 2400 =* ***£1,020 million****.*

**Q28** The expenditure of Company X in the year 2004 was £2,000 million and the income of Company X in 2004 was the same as its expenditure in 2007. What was the income (in million £) of Company X in 2007?

**£4,650** £3,850 £3,380 £2,950

Income of the company in 2004 was $Expenditure\left(1+\frac{profit(\%)}{100}\right)$ *=2,000 x (1+0.55) = 3,100*

*so, the expenditure in 2007 was 3,100. Income in 2007 was 3,100 x (1+0.50) =* ***£4,650****.*