

# Numerical Reasoning

## Test 8



### Solutions Booklet

#### Instructions

This practice test contains **30 questions**, and you will have **30 minutes** to answer them.

Each question will have four possible answers, one of which is correct.

Calculators are permitted for this test. It's recommended to have some rough paper for your calculations. You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time.

Try to find a time and place where you will not be interrupted during the test. When you are ready, turn to the next page and begin.

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US \$	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

**Q1** What was a Japanese Yen worth in Euros in Week 3?

- (A) €0.01
- (B) €0.05
- (C) €0.10
- (D) €0.15
- (E) €1.00

**Answer:**

**Step 1:** Convert from Yen in to £

$$1 = 1/134.8 = £0.00742$$

**Step 2:** Convert from £ in to Euro

$$0.00742 \times 1.3 = €0.01$$

Thus, the correct answer is (A), €0.01

Exchange Rate (to the £)					
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US \$	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

**Q2** How much is 5,000 South African Rand worth in Week 4 in US \$?

- (A) \$199.81
- (B) \$367.65
- (C) \$476.65
- (D) \$599.18
- (E) \$676.48

**Answer:**

**Step 1:** Convert from Rand in to £

$$5,000 / 13.6 = 367.65$$

**Step 2:** Convert from £ in to US \$

$$367.65 \times 1.84 = \$676.48$$

Thus, the correct answer is (E), \$676.48

Exchange Rate (to the £)					
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US \$	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

**Q3** In Week two 10,000 Japanese Yen is converted into £. In Week 5 this is converted into what value in Euros?

- (A) €110.00
- (B) €104.82
- (C) €99.53
- (D) €77.76
- (E) €60.75

**Answer:**

**Step 1:** Convert into £ (using Week 2 figures)

$$10,000 / 128.6 = £77.76$$

**Step 2:** Convert into Euros (using Week 5 figures)

$$£77.76 \times 1.28 = €99.53$$

Thus, the correct answer is (C), €99.53

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US \$	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

**Q4** During Week 1 a traveller splits £2,100 equally into US \$, Japanese Yen and South African Rand. How many £ does the traveller have on Week 3 if all the currencies are converted back into £ and he is charged a 5% fee for each transaction from one currency into another (to the nearest £100)?

- (A) £1,700
- (B) £1,800
- (C) £1,900
- (D) £2,000
- (E) £2,100

**Answer:**

**Step 1:** splits £2,100 equally into US \$, Japanese Yen and South African Rand  
 $£2,100 / 3 = £700$

**Step 2:** Calculate the amount of US \$, Japanese Yen and South African Rand (Week 1)

US \$:  $£700 \times 1.64 = \$1,148$

Japanese Yen:  $£700 \times 123.2 = 86,240$  Yen

South African Rand:  $£700 \times 13.4 = 9,380$  Rand

**Step 3** – Deduct a 5% charge for each currency

$\$1,148 \times .95 = \$1,090.6$

$86,240 \text{ Yen} \times .95 = 81,928 \text{ Yen}$

$9,380 \text{ Rand} \times .95 = 8,911 \text{ Rand}$

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US \$	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

**Step 4 – Convert back into £ (Week 3)**

$\$1,090.6 / 1.74 = \text{£}626.78$

$81928 \text{ Yen} / 134.8 = \text{£}607.77$

$8911 \text{ Rand} / 13.2 = \text{£}675.08$

*Total = £1,909.626.*

*Deduct a second 5% for the transaction fee.  $\text{£}1,909.63 \times 0.95 = \text{£}1,814 = \text{£}1,800$  (to the nearest £100)*

*Thus, the correct answer is (B), £1,800*

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US \$	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

**Q5** Which currency has shown the greatest proportionate change in value between Weeks 1 and 4?

- (A) Euro
- (B) US \$
- (C) Japanese Yen
- (D) South African Rand
- (E) Can't tell from data

**Answer:**

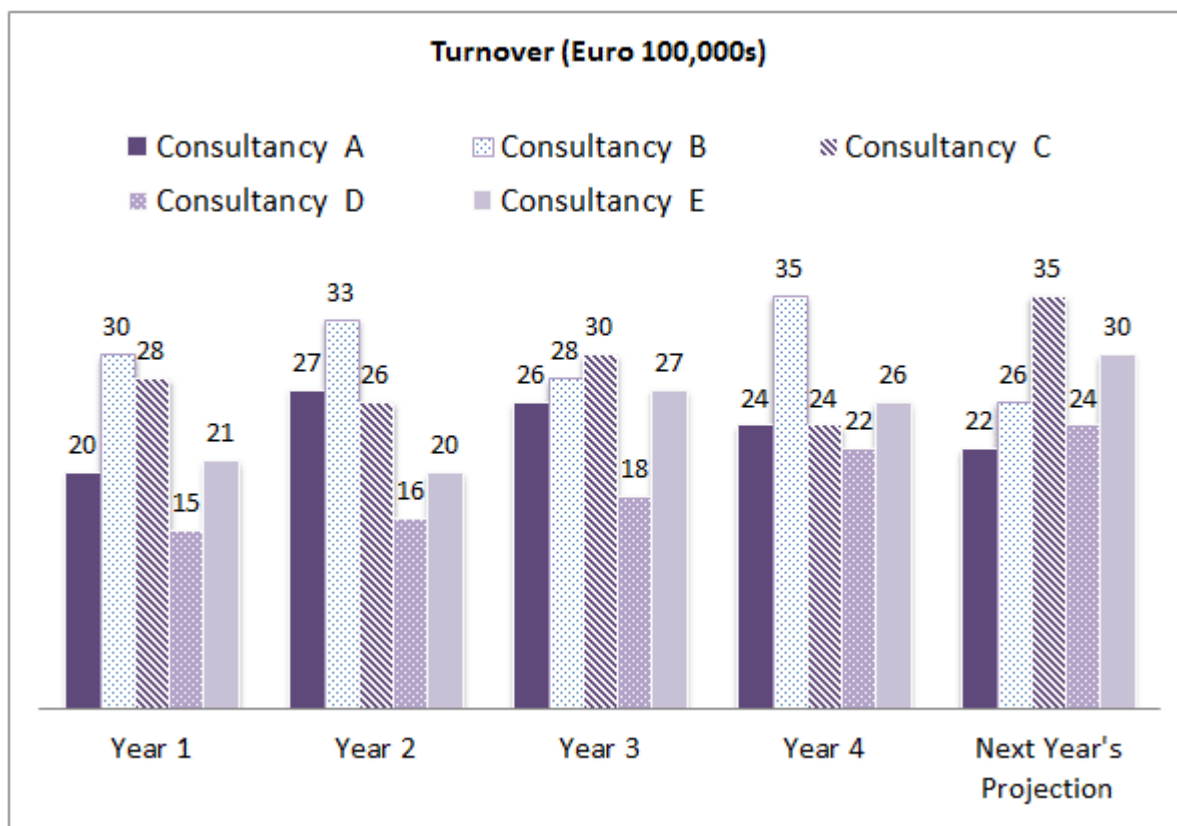
**Step 1:** Calculate the % change in value for each currency between Weeks 1 and 4  
Euro:  $(1.34 - 1.20) / 1.20 = 0.117$ . Note: some people find it quicker to calculate  $1.34 / 1.2$  but both methods produce the percentage.

US \$:  $(1.84 - 1.64) / 1.64 = 0.122$

Japanese Yen:  $(135.0 - 123.2) / 123.2 = 0.096$

South African Rand:  $(13.6 - 13.4) / 13.4 = 0.015$

Thus, the correct answer is (B), US \$



**Q6** Next Year's turnover projection for Consultancies A-E combined represents what proportional change on Year 4's turnover for Consultancies A-E?

- (A) 3.6%
- (B) 4.2%
- (C) 4.6%
- (D) 5.2%
- (E) 5.6%

**Answer:**

**Step 1:** Calculate Year 4's total

$$24 + 35 + 24 + 22 + 26 = 131$$

**Step 2 –** Calculate Next Year's Projected total turnover

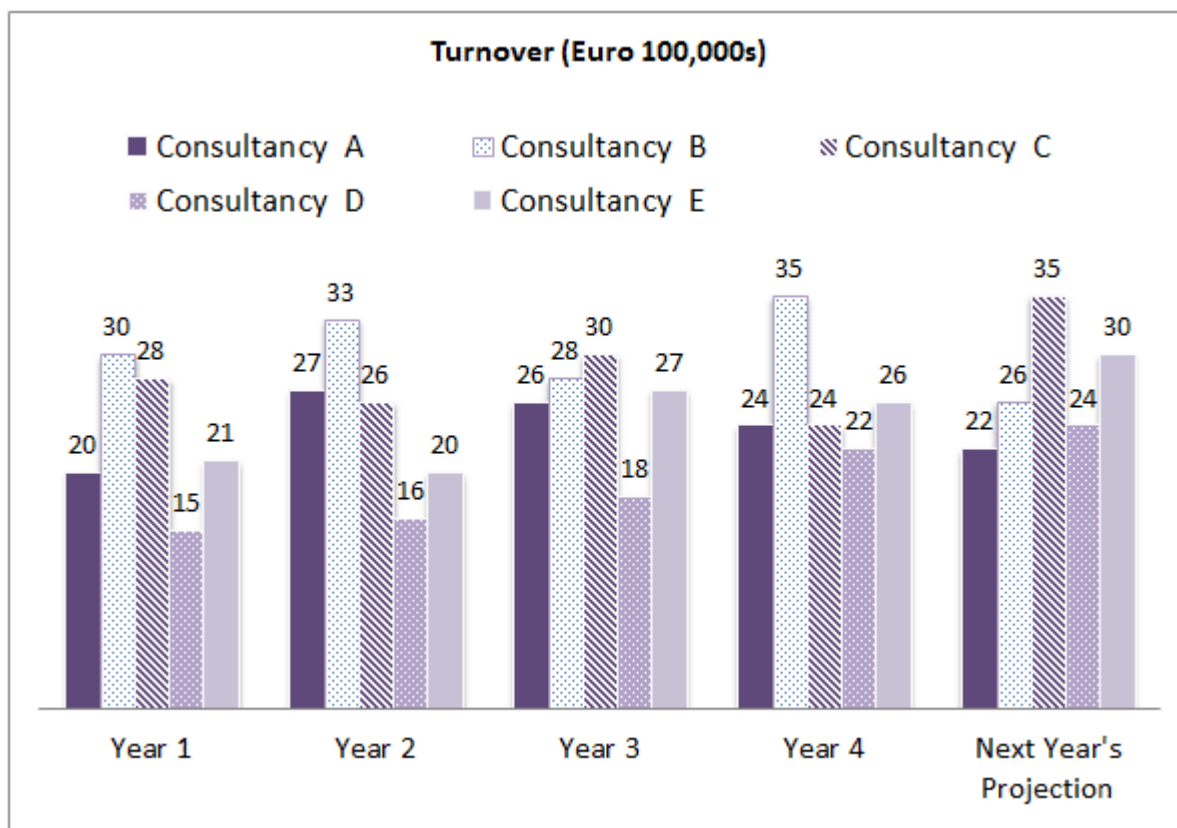
$$22 + 26 + 35 + 24 + 30 = 137$$

**Step 3 –** Calculate the % increase

$$6 / 131 = 4.6\%$$

So, the correct answer is (C) 4.6%





**Q7** If, in Year 3, Consultancies A to E represent 60% of the marketplace by value of sales, what is the value of the marketplace excluding Consultancies A-E?

- (A) €8.5 million
- (B) €8.6 million
- (C) €8.7 million
- (D) €8.8 million
- (E) Can't tell from the data

**Answer:**

**Step 1:** Calculate the total sales for Consultancies A to E in Year 3

$$26 + 28 + 30 + 18 + 27 = 129$$

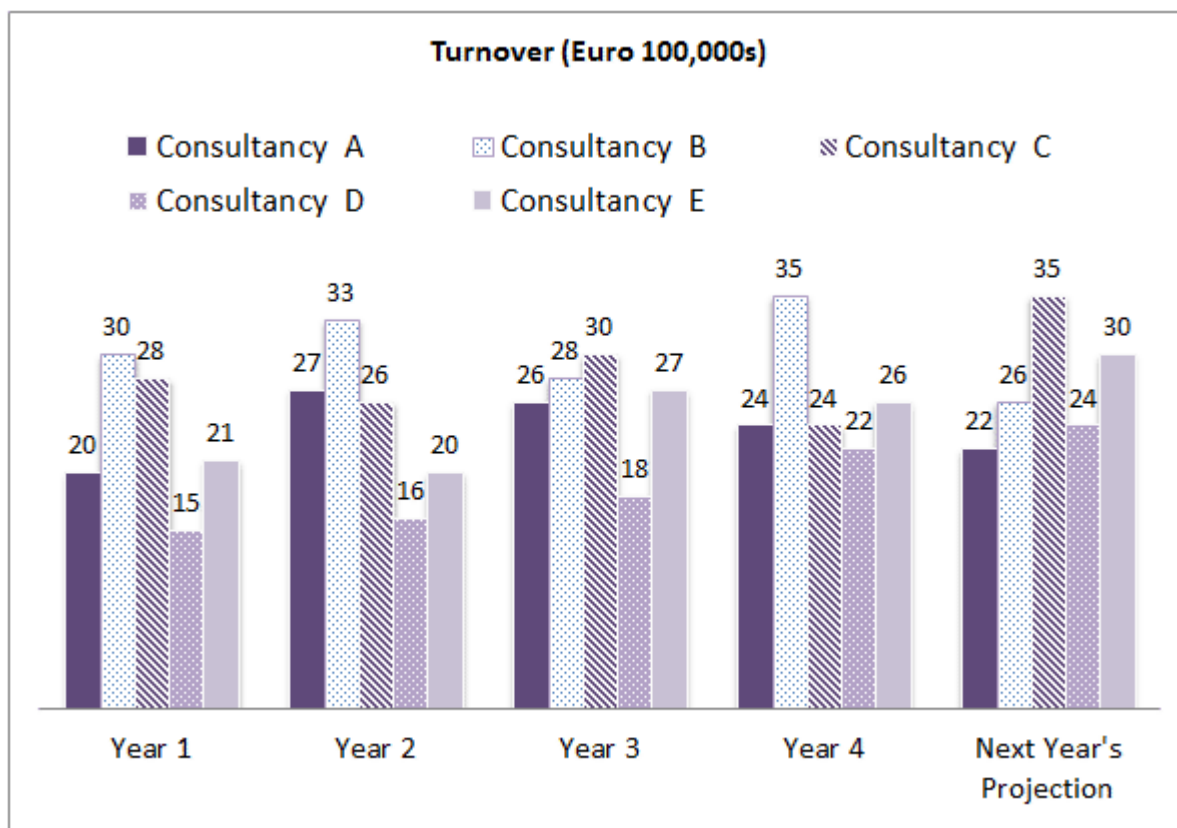
**Step 2:** Calculate the part of the market that excludes Consultancies A-E

We are told that  $129 = 60\%$

$$\text{So, } 100\% = 129/60 \times 100 = 215$$

$$\text{Now } 215 - (26 + 28 + 30 + 18 + 27) = \text{€}86 \text{ (100,000s)} = \text{€}8.6 \text{ million}$$

Thus, the correct answer is (B), €8.6 million



**Q8** The turnover target for Consultancy B over the 5 year period shown is €16.5 million. By how much does turnover need to exceed Next Year's Projected turnover in order for the target to be met?

- (A) €1.0 million
- (B) €1.1 million
- (C) €1.2 million
- (D) €1.3 million
- (E) None of these

**Answer:**

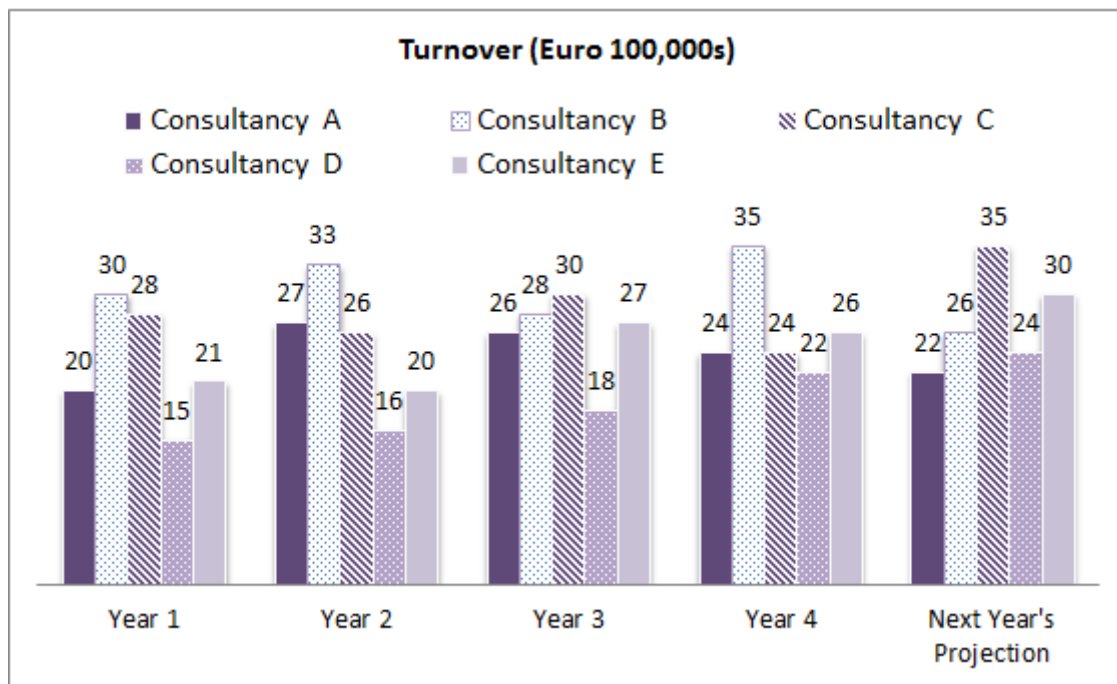
**Step 1:** Calculate the total Consultancy B turnover over the 5 year period

$$30 + 33 + 28 + 35 + 26 = 152$$

**Step 2 –** Calculate the total discrepancy with the target figure

$$€16.5 \text{ million} - €15.2 \text{ million} = €1.3 \text{ million}$$

So, the correct answer is (D), €1.3 million



**Q9** Next year, which company is projecting the smallest percentage change in its turnover?

- (A) Consultancy A
- (B) Consultancy B
- (C) Consultancy C
- (D) Consultancy D
- (E) Consultancy E

**Answer:**

**Step 1:** Calculate the % change in turnover projected for each company

Consultancy A:  $2 / 24 \times 100\% = 8.3\%$

Consultancy B:  $9 / 35 \times 100\% = 25.7\%$

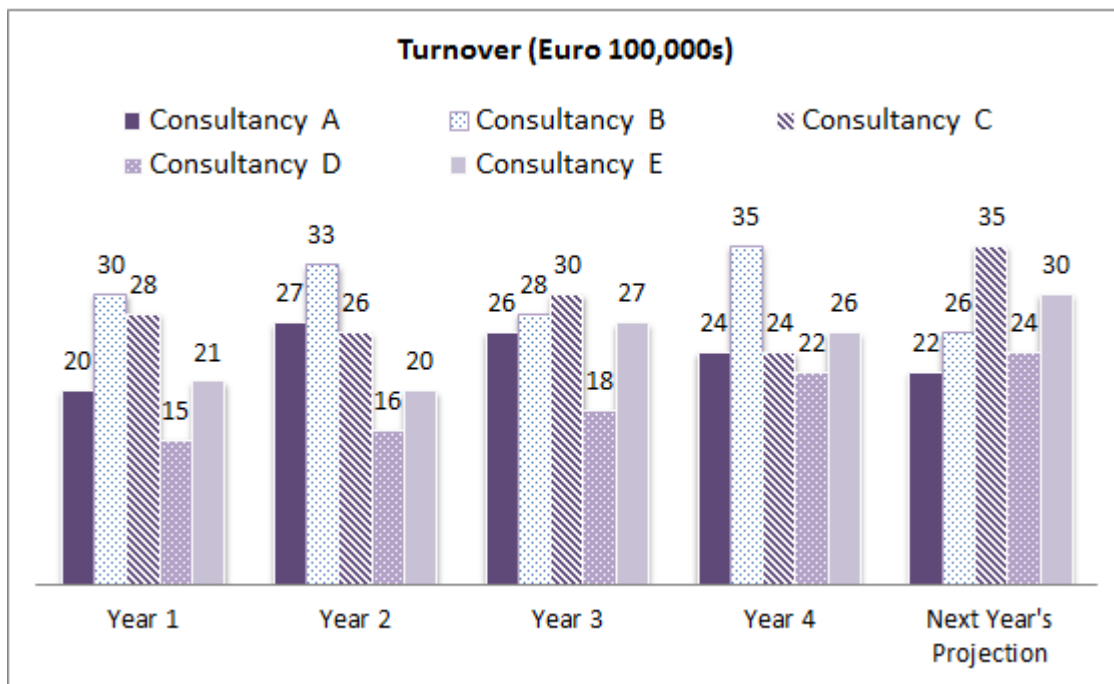
Consultancy C:  $11 / 24 \times 100\% = 45.8\%$

Consultancy D:  $2 / 22 \times 100\% = 9\%$

Consultancy E:  $4 / 26 \times 100\% = 15.4\%$

**Tip:** just by inspecting the data you could probably see that the answer is going to be either Consultancy A or D, so you could save time by calculating just these.

Thus, the correct answer is (A), Consultancy A



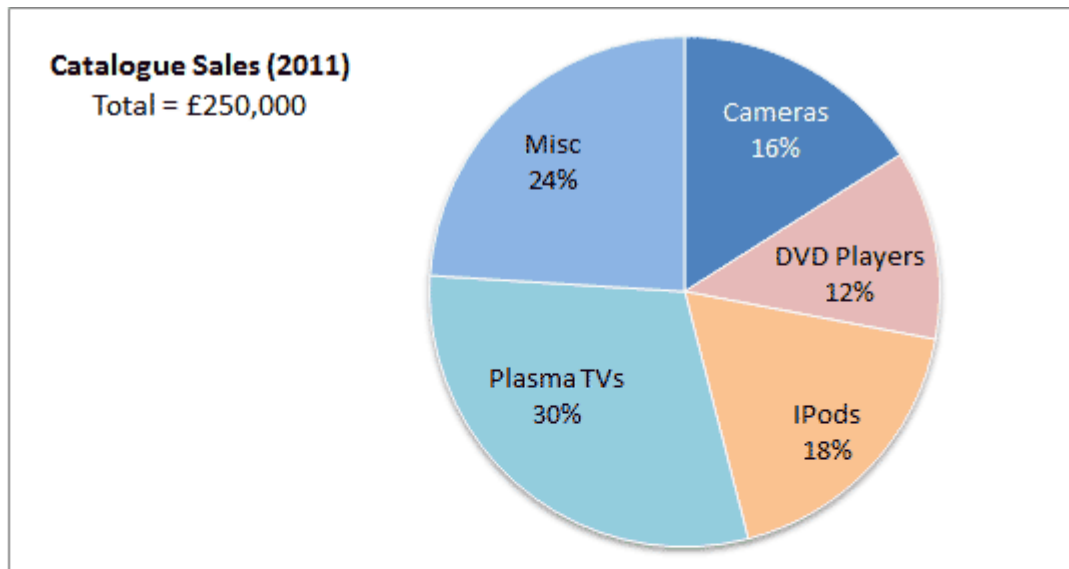
**Q10** What is the ratio of Year 3's Consultancy C's turnover to Consultancy E's turnover?

- (A) 2 : 5
- (B) 4 : 7
- (C) 5 : 7
- (D) 10 : 9
- (E) 5 : 2

**Answer:**

**Step 1:** *Consultancy C : Consultancy E = 30 : 27 = 10 : 9*

*Thus, the correct answer is (D), 10 : 9*



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
iPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

**Q11** What % of total plasma TV sales are made online?

- (A) 25%
- (B) 28%
- (C) 30%
- (D) 38%
- (E) 42%

**Answer:**

**Step 1:** Calculate the total sales for plasma TVs using both the table and the graph.

$$£325,000 + £456,000 + (£250,000 \times 30\%) = £856,000$$

**Step 2:** Calculate the % of sales that are made online

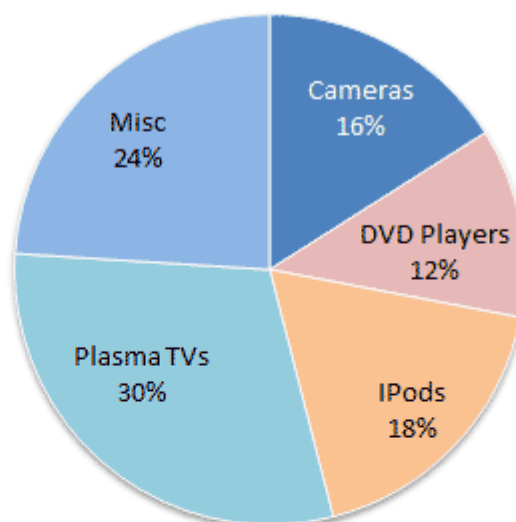
$$£325,000 / £856,000 = 38\%$$

Thus, the correct answer is (D), 38%

**Note:** 42% is deliberately used as a distractor because some people will miss the graph and calculate  $325,000 \div (325,000 + 456,000)$

**Catalogue Sales (2011)**

Total = £250,000



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
iPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

**Q12** What is the difference in value between total sales for iPods compared to cameras?

- (A) £912,000
- (B) £812,000
- (C) £712,000
- (D) £612,000
- (E) £512,000

**Answer:**

**Step 1:** Calculate the total sales for iPods

$$£852,000 + £644,000 + (18\% \times £250,000) = £1,541,000$$

**Step 2:** Calculate the total sales for cameras

$$£336,000 + £553,000 + (16\% \times £250,000) = £929,000$$

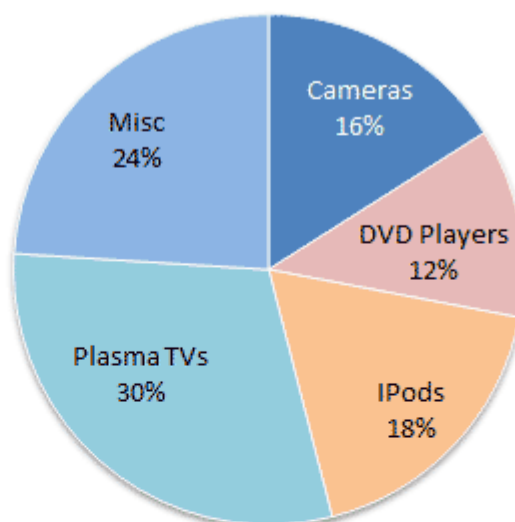
**Step 3 –** Calculate the difference

$$£1,541,000 - £929,000 = £612,000$$

Thus, the correct answer is (D), £612,000

**Catalogue Sales (2011)**

Total = £250,000



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
IPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

**Q13** If the High Street and Catalogue sales of DVD Players had been made online, what % of total Online sales would DVD Players represent?

- (A) 28%
- (B) 30%
- (C) 32%
- (D) 34%
- (E) 36%

**Answer:**

**Step 1:** Calculate the value of catalogue sales of DVDs

$$£250,000 \times 12\% = £30,000$$

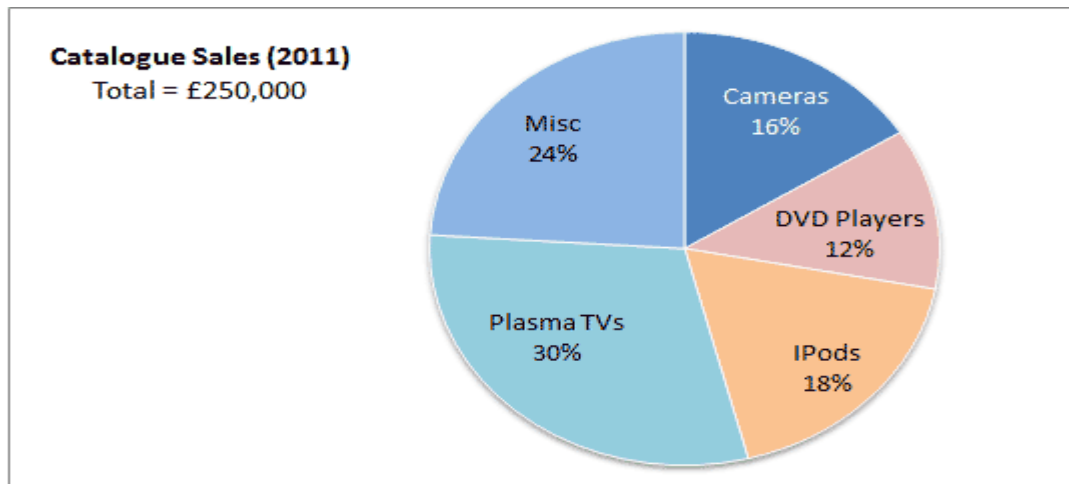
**Step 2:** Sum the High Street and catalogue sales of DVD players

$$£30,000 + £483,000 = £513,000$$

**Step 3 –** Calculate the % of DVD player sales that are online

$$£808,000 + £513,000 / (£852,000 + £808,000 + £513,000 + £553,000 + £325,000 + £575,000) = £1,321,000 / £3,626,000$$

Thus, the correct answer is (E), 36%



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
iPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

**Q14** In 2012 total Catalogue sales are forecast to increase by  $\frac{1}{4}$ , total Online sales to increase by a  $\frac{1}{5}$ th, and High Street sales to decrease by 12%. What will be the 2012 sales for Catalogue, Online and High Street combined (to the nearest £1,000)?

- (A) £5,597,000
- (B) £6,285,000
- (C) £6,333,000
- (D) £6,433,000
- (E) £6,613,000

**Answer:**

**Step 1:** Calculate the total 2011 sales (Online and for the High Street)

Online: £852,000 + £808,000 + £553,000 + £325,000 + £575,000 = £3,113,000

High Street: £644,000 + £483,000 + £336,000 + £456,000 + £678,000 = £2,597,000

**Step 2:** Calculate the total 2012 sales (Online and for the High Street)

Online: £3,113,000  $\times$  1.2 = £3,735,600

High Street: £2,597,000  $\times$  88% = £2,285,360

**Step 3 –** Calculate the total 2012 sales (Catalogue)

£250,000  $\times$  1.25 = £312,500

**Step 4 –** Sum the total January sales (Online, Catalogue and High Street)

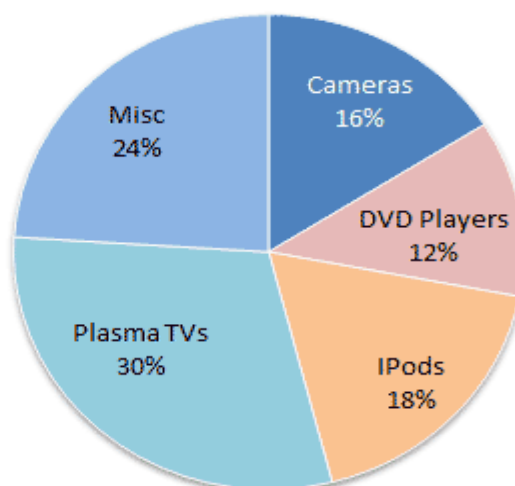
£3,735,600 + £2,285,360 + £312,500 = £6,333,460 = £6,333,000 (to the nearest £1,000)

Thus, the correct answer is (C), £6,333,000



**Catalogue Sales (2011)**

Total = £250,000



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
IPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

**Q15** The profit made from selling cameras online compared to the High Street is in the ratio 9:7, and 15% of online camera sales is profit. What is the 2011 profit for High Street camera sales?

- (A) £36,291
- (B) £64,517
- (C) £66,980
- (D) £72,428
- (E) £82,950

**Answer:**

**Step 1:** Calculate the profit for online camera sales

$$15\% \times £553,000 = £82,950$$

**Step 2:** Calculate the profit for High Street camera sales

$$£82,950 \times 7 / 9 = £64,517$$

Thus, the correct answer is (B), £64,517

**Tip:** don't fall for the trap of answering A) £36,291. The wording of the question is important. If the question had said something like "the sales were split between High Street and Online in the ratio 9:7" then you would be correct to multiply £82,950 by  $7/(9+7)$ . But the ratio is given as one number in relation to another, so it is simply a case of multiplying by  $7/9$ .

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

**Q16** Which Department has the highest expense budget per member of staff?

- (A) HR
- (B) Marketing
- (C) Sales
- (D) IT
- (E) Finance

**Answer:**

**Step 1:** Have a quick look at the data to see if this can be seen by inspection. In this case, it is unlikely you can 'see' the answer before doing some number-crunching. Calculate the expense budget per member of staff for each department.

$$6,500 / 3 = \text{£}2,167$$

$$16,000 / 6 = \text{£}2,667$$

$$22,500 / 12 = \text{£}1,875$$

$$4,500 / 5 = \text{£}900$$

$$20,000 / 7 = \text{£}2,857$$

Thus, the correct answer is (E), Finance

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

**Q17** If the annual expense budget was evenly allocated for each Quarter, which Department is under budget by the highest amount in Quarter 4?

- (A) HR
- (B) Marketing
- (C) Sales
- (D) Finance
- (E) R&D

**Answer:**

**Step 1:** Calculate the quarterly expense budgets for each Department (excluding IT which is not shown in the answer options)

HR:  $6,500 / 4 = 1,625$

Marketing:  $16,000 / 4 = 4,000$

Sales:  $22,500 / 4 = 5,625$

Finance:  $20,000 / 4 = 5,000$

R&D:  $6,000 / 4 = 1,500$

**Step 2:** Compare to the Quarter 4 figures for each Dept.

HR:  $1,625 - 1,346 = £279$

Marketing is over budget

Sales:  $5,625 - 5,245 = £380$

Finance:  $5,000 - 4,463 = £537$

R&D is over budget

Thus, the correct answer is (D), Finance

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

**Q18** 60% of the Sales Department's budgets for Quarters 1 and 4 was for attending a Sales Conference. The remainder of the budget was split equally between accommodation and travel costs. What were the Sales Department's travel costs for Quarters 1 and 4 combined?

- (A) £2,414
- (B) £2,500
- (C) £3,500
- (D) £4,828
- (E) Can't tell from the data

**Answer:**

**Step 1:** *Although the annual expense budget is provided, we are not told what the quarterly expense budget is. The table provides data for the annual expense budget and the quarterly expenses, without any mention of what the quarterly expense budget may be, since it cannot be assumed that the annual budget is spread equally over each quarter. Therefore, we cannot accurately ascertain 60% of the quarterly budget based on the data provided.*

Thus, the correct answer is (E), Can't tell from the data

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

**Q19** The Finance Department has receipts for £14,476 of its annual expenses. What percentage of the Finance Department's annual expenses do not have receipts?

- (A) 5%
- (B) 10%
- (C) 15%
- (D) 20%
- (E) 25%

**Answer:**

**Step 1:** Total the Finance Department's expenses for all 4 quarters

$$4,257 + 4,830 + 4,545 + 4,463 = 18,095$$

**Step 2:** Calculate the % for which there are receipts

$$14,476 / 18,095 = 80\%$$

**Step 3 -** Calculate the % for which there are no receipts

$$100 - 80 = 20\%$$

Thus, the correct answer is (D), 20%

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

**Q20** If the percentage changes in expenses that each Department exhibited between Quarters 3-4 continued into the first quarter of the next year, what would be that quarter's total expenses (to the nearest £100)?

- (A) £17,100
- (B) £19,100
- (C) £19,600
- (D) £20,600
- (E) None of these

**Answer:**

**Step 1:** Calculate the % change by Department between Quarters 3-4

HR:  $(1,346 - 1,305) / 1,305 = 3.14\%$ . Note: some people find it quicker to calculate  $1,346 \div 1,305 = 1.0314$

Marketing:  $(4,309 - 3,652) / 4,309 = 17.99\%$

Sales:  $(5,245 - 5,091) / 5,245 = 3.02\%$

IT:  $(956 - 938) / 956 = 1.92\%$

Finance:  $(4,463 - 4,545) / 4,463 = -1.80\%$

R&D:  $(1,821 - 1,755) / 1,821 = 3.76\%$

**Step 2:** Calculate the next quarter's expenses for each department

HR:  $103.14\% \times 1,346 = 1,388$

Marketing:  $4,309 \times 117.99\% = 5,084$

Sales:  $5,245 \times 103.02\% = 5,403.7$

IT:  $956 \times 101.92\% = 974$

Finance:  $4,463 \times 98.2\% = 4,383$

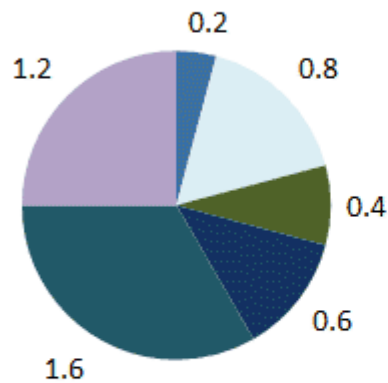
R&D:  $1,821 \times 103.76\% = 1,889$

**Step 3 -** Calculate the next quarter's total expenses

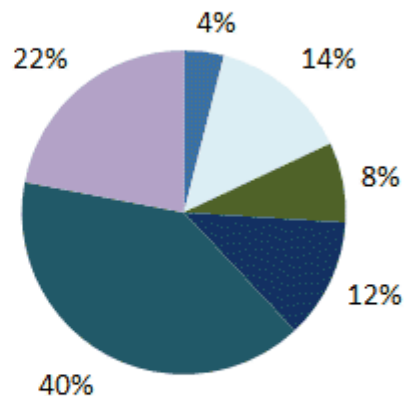
$1,388 + 5,084 + 5,404 + 974 + 4,383 + 1,889 = £19,122$

Thus, the correct answer is (B), £19,100

**Growth Fund Investments - Year 1**  
(\$millions)



**Growth Fund Investments - Year 2**  
(\$millions) Total = \$4.5 million



■ Gilts
 ■ Fixed Interest
 ■ North American Equities  
■ European Equities
 ■ UK Equities
 ■ Pacific Rim Equities

**Q21** What was Year 2's decrease in the amount invested in North American and European Equities compared to Year 1?

- (A) \$10,000
- (B) \$100,000
- (C) \$110,000
- (D) \$111,000
- (E) \$111,100

**Answer:**

**Step 1:** Calculate Year 2's investments in North American and European Equities

North American:  $\$4.5\text{million} \times 8\% = \$360,000$

European:  $\$4.5\text{million} \times 12\% = \$540,000$

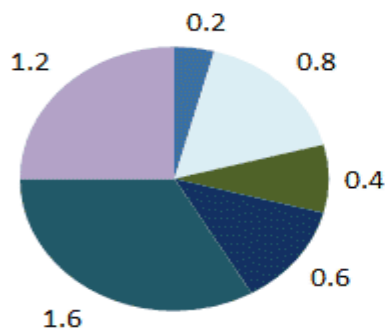
**Step 2:** Calculate Year 2's decrease compared to Year 1

North American change + European change

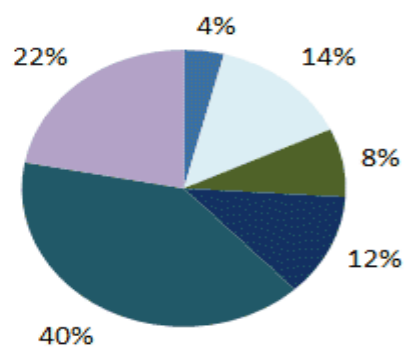
$= (\$400,000 - \$360,000) + (\$600,000 - \$540,000) = \$100,000$

Thus. the correct answer is (B), \$100,000

**Growth Fund Investments - Year 1**  
(\$millions)



**Growth Fund Investments - Year 2**  
(\$millions) Total = \$4.5 million



■ Gilts                      ■ Fixed Interest                      ■ North American Equities  
■ European Equities                      ■ UK Equities                      ■ Pacific Rim Equities

**Q22** Which type of investment shows the largest difference between Year 1 and Year 2 in the proportion it contributed to the total Growth Fund?

- (A) Gilts
- (B) Fixed interest
- (C) North American Equities
- (D) UK Equities
- (E) Pacific Rim Equities

**Answer:**

**Step 1:** calculate the proportion of the fund that each investment made up in Year 1

*Gilts* =  $0.2 / 4.8 = 4.17\%$

*Fixed Interest* =  $0.8 / 4.8 = 16.67\%$

*North American Equities* =  $0.4 / 4.8 = 8.33\%$

*European Equities* =  $0.6 / 4.8 = 12.5\%$

*UK Equities* =  $1.6 / 4.8 = 33.33\%$

*Pacific Rim Equities* =  $1.2 / 4.8 = 25\%$

**Step 2:** compare these figures to the % figures shown in Year 2's pie-chart

*Gilts* = 4.17% vs. 4%

*Fixed Interest* = 16.67% vs. 14%

*North American Equities* = 8.33% vs. 8%

*European Equities* = 12.5% vs. 12%

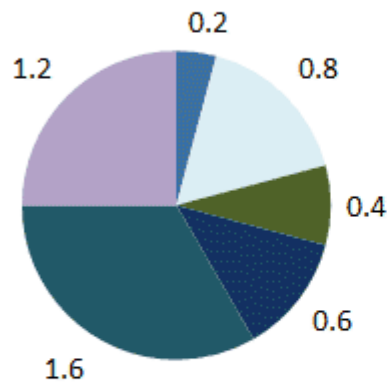
*UK Equities* = 33.33% vs. 40%

*Pacific Rim Equities* = 25% vs. 22%

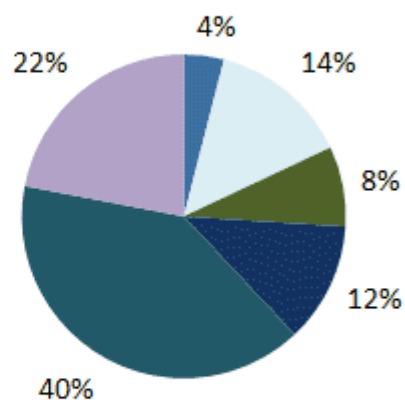
Thus, the correct answer is (D), UK Equities



**Growth Fund Investments - Year 1**  
(\$millions)



**Growth Fund Investments - Year 2**  
(\$millions) Total = \$4.5 million



■ Gilts
 ■ Fixed Interest
 ■ North American Equities  
■ European Equities
 ■ UK Equities
 ■ Pacific Rim Equities

**Q23** If the proportional change in the Growth Fund between Year 1 and Year 2 continued over subsequent years, what would be the projected Growth Fund value in Year 6?

- (A) \$3.48 million
- (B) \$3.51 million
- (C) \$3.71 million
- (D) \$5.73 million
- (E) \$5.95 million

**Answer:**

**Step 1:** Calculate the proportional change in the Growth Fund between Year 1 and 2  
 $(4.8 - 4.5) / 4.8 = - 6.25\%$

**Step 2:** Apply this % to calculate the growth Fund value each year up to Year 6

Year 3:  $93.75\% \times 4.5 = 4.2188$

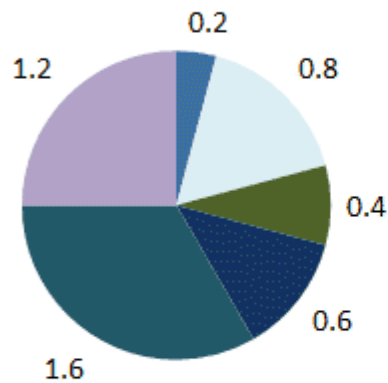
Year 4:  $93.75\% \times 4.2188 = 3.955$

Year 5:  $93.75\% \times 3.955 = 3.708$

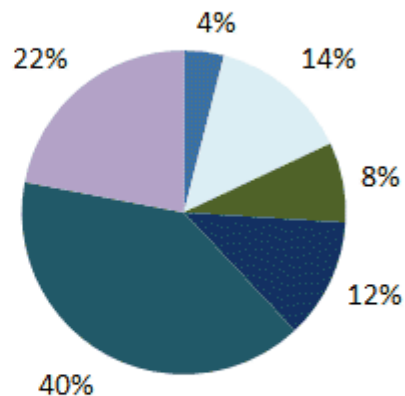
Year 6:  $93.75\% \times 3.708 = \$3.476$  million

Thus, the correct answer is (A), \$3.48 million

**Growth Fund Investments - Year 1**  
(\$millions)



**Growth Fund Investments - Year 2**  
(\$millions) Total = \$4.5 million



■ Gilts
 ■ Fixed Interest
 ■ North American Equities  
■ European Equities
 ■ UK Equities
 ■ Pacific Rim Equities

**Q24** If in Year 2 the amount invested in Year 1's Fixed Interest fund had been sold and converted into European Equity funds, what is the value of European Equity funds in Year 2? (Assume no charges are incurred).

- (A) \$540,000
- (B) \$700,000
- (C) \$800,000
- (D) \$1.24 million
- (E) \$1.34 million

**Answer:**

**Step 1:** Calculate the Year 2 amount of European Equity funds

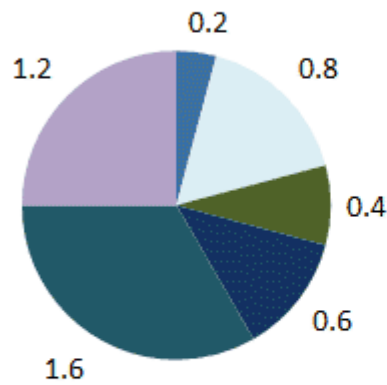
European Equity:  $12\% \times \$4.5 \text{ million} = \$540,000$

**Step 2:** Sum the Year 1 Fixed Interest and Year 2 European Equity investments

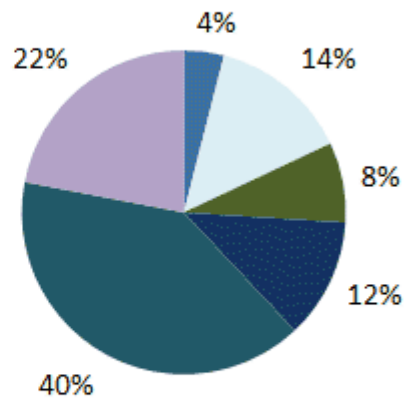
$\$800,000 + \$540,000 = \$1,340,000$

Thus, the correct answer is (E), \$1.34 million

**Growth Fund Investments - Year 1**  
(\$millions)



**Growth Fund Investments - Year 2**  
(\$millions) Total = \$4.5 million



■ Gilts
 ■ Fixed Interest
 ■ North American Equities  
■ European Equities
 ■ UK Equities
 ■ Pacific Rim Equities

**Q25** In Year 3 the percentage of the Growth Fund held in each investment type is the same as in Year 1. The total value of the Growth Fund increases by 14% of the Year 2 value. What is the value of Year 3's holding in UK Equities?

- (A) \$1,530,000
- (B) \$1,170,000
- (C) \$1,710,000
- (D) \$2,040,000
- (E) \$2,030,000

**Answer:**

**Step 1:** Calculate the percentage holding in UK Equities

$$1.6 / 4.8 = 33.33\%$$

**Step 2:** Calculate the increased Growth Fund value

$$\$4.5 \text{ million} \times 114\% = \$5,130,000$$

**Step 3 –** Calculate the value of the holding in UK Equities

$$\$5,130,000 \times 33.33\% = \$1,710,000$$

Thus, the correct answer is (C), \$1,710,000

£	Jan	Feb	March	April	May
<b>Total sales</b>	136,000	135,000	136,500	156,000	145,000
<b>Operating expenses</b>	61,000	63,000	65,000	50,000	55,000
<b>Income</b>	£75,000	£72,000	£71,500	£106,000	£90,000
<b>Current assets</b>	66,500	63,000	65,000	68,000	66,000
<b>Property assets</b>	36,000	35,500	36,000	38,000	36,500
<b>Fixed assets</b>	38,000	34,000	32,000	45,000	40,000
<b>Total assets</b>	£140,500	£132,500	£133,000	£151,000	£142,500
<b>Liabilities</b>	34,400	35,600	33,000	35,000	33,500

*Working Capital to Total Assets ratio = (Current Assets – Liabilities) / Total Assets*

**Q26** Which month has the lowest asset turnover value? (Use the formula Asset Turnover = Total Sales / Fixed Assets)

- (A) January
- (B) February
- (C) March
- (D) April
- (E) May

**Answer:**

**Step 1:** Calculate Asset Turnover = Total Sales / Fixed Assets for each month

Jan:  $136,000 / 38,000 = 3.58$

Feb:  $135,000 / 34,000 = 3.97$

March:  $136,500 / 32,000 = 4.27$

April:  $156,000 / 45,000 = 3.47$

May:  $145,000 / 40,000 = 3.63$

Thus, the correct answer is (D), April

£	Jan	Feb	March	April	May
<b>Total sales</b>	136,000	135,000	136,500	156,000	145,000
<b>Operating expenses</b>	61,000	63,000	65,000	50,000	55,000
<b>Income</b>	£75,000	£72,000	£71,500	£106,000	£90,000
<b>Current assets</b>	66,500	63,000	65,000	68,000	66,000
<b>Property assets</b>	36,000	35,500	36,000	38,000	36,500
<b>Fixed assets</b>	38,000	34,000	32,000	45,000	40,000
<b>Total assets</b>	£140,500	£132,500	£133,000	£151,000	£142,500
<b>Liabilities</b>	34,400	35,600	33,000	35,000	33,500

*Working Capital to Total Assets ratio = (Current Assets – Liabilities) / Total Assets*

**Q27** Compared to May's figures, Total sales for June show an increase of 8% and Operating expenses show a decrease of 7%. What is June's Income?

- (A) £105,450
- (B) £95,450
- (C) £85,450
- (D) £75,450
- (E) Can't tell from the data

**Answer:**

**Step 1:** The table shows that  $\text{Income} = \text{Total sales} - \text{Operating expenses}$

**Step 2:** Calculate June's values for Total sales and Operating expenses

$\text{Total sales} = 145,000 \times 108\% = 156,600$

$\text{Operating expenses} = 55,000 \times 93\% = 51,150$

**Step 3 – Apply the formula**  $\text{Income} = \text{Total sales} - \text{Operating expenses}$

$\text{Income} = 156,600 - 51,150 = £105,450$

Thus, the correct answer is (A), £105,450

£	Jan	Feb	March	April	May
<b>Total sales</b>	136,000	135,000	136,500	156,000	145,000
<b>Operating expenses</b>	61,000	63,000	65,000	50,000	55,000
<b>Income</b>	£75,000	£72,000	£71,500	£106,000	£90,000
<b>Current assets</b>	66,500	63,000	65,000	68,000	66,000
<b>Property assets</b>	36,000	35,500	36,000	38,000	36,500
<b>Fixed assets</b>	38,000	34,000	32,000	45,000	40,000
<b>Total assets</b>	£140,500	£132,500	£133,000	£151,000	£142,500
<b>Liabilities</b>	34,400	35,600	33,000	35,000	33,500

*Working Capital to Total Assets ratio = (Current Assets – Liabilities) / Total Assets*

**Q28** Which month has the highest Working capital to Total assets ratio?

- (A) January
- (B) February
- (C) March
- (D) April
- (E) May

**Answer:**

**Step 1:** Use the equation provided to calculate the working capital for each month

*Working Capital to Total Assets ratio = (Current Assets – Liabilities) / Total Assets*

*January: (66,500 – 34,400) / 140,500 = 0.23*

*February: (63,000 – 35,600) / 132,500 = 0.21*

*March: (65,000 – 33,000) / 133,000 = 0.24*

*April: (68,000 – 35,000) / 151,000 = 0.22*

*May: (66,000 – 33,500) / 142,500 = 0.23*

*Thus the correct answer is (C), March*

£	Jan	Feb	March	April	May
<b>Total sales</b>	136,000	135,000	136,500	156,000	145,000
<b>Operating expenses</b>	61,000	63,000	65,000	50,000	55,000
<b>Income</b>	£75,000	£72,000	£71,500	£106,000	£90,000
<b>Current assets</b>	66,500	63,000	65,000	68,000	66,000
<b>Property assets</b>	36,000	35,500	36,000	38,000	36,500
<b>Fixed assets</b>	38,000	34,000	32,000	45,000	40,000
<b>Total assets</b>	£140,500	£132,500	£133,000	£151,000	£142,500
<b>Liabilities</b>	34,400	35,600	33,000	35,000	33,500

*Working Capital to Total Assets ratio = (Current Assets – Liabilities) / Total Assets*

**Q29** If the average value of Total assets between the months of April to June is £150,000, what is the value of Total assets in June?

- (A) £154,500
- (B) £155,000
- (C) £155,500
- (D) £156,000
- (E) £156,500

**Answer:**

**Step 1:** Enter the Total assets figures for April to June into an equation, where  $z$  = Total assets in June.

$$151,000 + 142,500 + z = 150,000 \times 3$$

$$z = 450,000 - 151,000 - 142,500 = 156,500$$

Thus, the correct answer is (E), £156,500

£	Jan	Feb	March	April	May
<b>Total sales</b>	136,000	135,000	136,500	156,000	145,000
<b>Operating expenses</b>	61,000	63,000	65,000	50,000	55,000
<b>Income</b>	£75,000	£72,000	£71,500	£106,000	£90,000
<b>Current assets</b>	66,500	63,000	65,000	68,000	66,000
<b>Property assets</b>	36,000	35,500	36,000	38,000	36,500
<b>Fixed assets</b>	38,000	34,000	32,000	45,000	40,000
<b>Total assets</b>	£140,500	£132,500	£133,000	£151,000	£142,500
<b>Liabilities</b>	34,400	35,600	33,000	35,000	33,500

*Working Capital to Total Assets ratio = (Current Assets – Liabilities) / Total Assets*

**Q30** If the average monthly sales for the first five months of the year was the same for the months of June to December, what was the total annual sales?

- (A) £1,500,400
- (B) £1,600,400
- (C) £1,700,400
- (D) £1,800,400
- (E) £1,900,400

**Answer:**

**Step 1:** Calculate the total sales for Jan – May

$$136,000 + 135,000 + 136,500 + 156,000 + 145,000 = 708,500$$

**Step 2:** Since the monthly average is the same, multiply this figure by 12 / 5

$$708,500 \times 12 / 5 = £1,700,400$$

Thus, the correct answer is (C), £1,700,400



**End of test**