Numerical Reasoning

Test 11

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.

	Number of Employees				
Parent Company's 5 subsidiary companies	2005	2006	2007	2008	2009
Subsidiary 1	1,538	1,584	1,573	1,585	1,614
Subsidiary 2	1,107	1,084	1,060	1,068	962
Subsidiary 3	1,340	1,384	1,393	1,398	1,412
Subsidiary 4	1,505	1,495	1,528	1,548	1,583
Subsidiary 5	1,010	980	946	997	1,029
Parent company: Employees working part-time (%)	12.0	8.1	8.0	5.4	5.0

Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Q1 Between which three years was there an average of 1,553 employees for one of the Subsidiary Companies?

(A) 2005-2007 Subsidiary 1
(B) 2006-2008 Subsidiary 1
(C) 2007-2009 Subsidiary 4
(D) 2007-2009 Subsidiary 1
(E) None of these

Answer:

Step 1: *Looking at the employee totals there are only two Subsidiary Companies that could have an average of 1,553 employees across three years: Subsidiary Companies 1 and 4. The answer options include Subsidiary Companies 1 and 4, as well as (E) None of these.*
Step 2: *Calculate the average number of employees for answer options (A) – (D)*
2005-2007 Subsidiary 1 = 1,565
2006-2008 Subsidiary 1 = 1,581
2007-2009 Subsidiary 4 = 1,553
2007-2009 Subsidiary 1 = 1,591
Thus the correct answer is (C) 2007-2009 Subsidiary 4

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Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Q2 In 2008 subsidiary company 4 comprised 2 regions with double the number of employees in one region compared to the other. If the ratio of male:female employees in the smaller region was 1:1.15, what was this region's number of male employees?

(A) 240
(B) 828
(C) 414
(D) 394
(E) 360

Answer:

Step 1: *Calculate the number of employees in the smaller region 1,548/3= 516 employees*
Step 2: *Apply the 1:1.15 Male:Female ratio 516/2.15 = 240 male employees*
Thus the correct answer is (A) 240

	Number of Employees				
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Parent company: Employees working part-time (%)	12.0	8.1	8.0	5.4	5.0

Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Q3 1 in 15 of the parent company's part-time employees were managers in 2005, and 1 in 13 part-time employees were managers in 2007. What was the difference in the number of part-time managers in 2005 compared to 2007?

(A) 14 less
(B) 12 more
(C) 12 less
(D) 13 more
(E) Cannot Say

Answer:

Step 1:

	2005	*2007*
	1,538	*1,573*
	1,107	*1,060*
	1,340	*1,393*
	1,505	*1,528*
	1,010	*946*
Total employees for each year =	*6,500*	*6,500*

	Number of Employees				
Parent Company's 5 subsidiary companies	**2005**	**2006**	**2007**	**2008**	**2009**
Subsidiary 1	1,538	1,584	1,573	1,585	1,614
Subsidiary 2	1,107	1,084	1,060	1,068	962
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Subsidiary 5	1,010	980	946	997	1,029
Parent company: Employees working part-time (%)	12.0	8.1	8.0	5.4	5.0

Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Step 2: Part-time employees = 6,500 x 12% = 780 6,500 x 8% = 520

Step 3: Managers = 780 / 15 =52 520 /13 = 40

Step 4: Difference = 52 – 40 = 12

Thus the correct answer is (B) 12 more

	Number of Employees				
Parent Company's 5 subsidiary companies	**2005**	**2006**	**2007**	**2008**	**2009**
Subsidiary 1	1,538	1,584	1,573	1,585	1,614
Subsidiary 2	1,107	1,084	1,060	1,068	962
Subsidiary 3	1,340	1,384	1,393	1,398	1,412
Subsidiary 4	1,505	1,495	1,528	1,548	1,583
Subsidiary 5	1,010	980	946	997	1,029
Parent company: Employees working part-time (%)	12.0	8.1	8.0	5.4	5.0

Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Q4 What % of the Parent Company's total employees worked for Subsidiary 5 in 2006 (to the nearest whole %)?

(A) 12%
(B) 10%
(C) 18%
(D) 15%
(E) 9%

Answer:

Step 1: *Calculate the total number of employees across all 5 Subsidiaries i.e. the Parent Company's number of employees = 6,527*
Step 2: *Calculate the % of Subsidiary 5 employees 980/6527 = 15.01%*
Thus the correct answer is (D) 15%

	Number of Employees				
Parent Company's 5 subsidiary companies	**2005**	**2006**	**2007**	**2008**	**2009**
Subsidiary 1	1,538	1,584	1,573	1,585	1,614
Subsidiary 2	1,107	1,084	1,060	1,068	962
Subsidiary 3	1,340	1,384	1,393	1,398	1,412
Subsidiary 4	1,505	1,495	1,528	1,548	1,583
Subsidiary 5	1,010	980	946	997	1,029
Parent company: Employees working part-time (%)	12.0	8.1	8.0	5.4	5.0

Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Q5 In 2009 what was the absolute difference between the Parent Company's full-time employees and part-time employees (if Number of employees = Full-time employees + part-time employees)?

(A) 6,270
(B) 90
(C) 4,733
(D) 6,600
(E) 5,940

Answer:

Step 1: *Calculate the total employees in 2009*
1,614 + 962 + 1,412 + 1,583 + 1,029 = 6,600
Step 2: *Calculate the number of full-time employees*
Number of employees = Full-time employees + part-time employees
6,600 = 100% = x% + 5%
Full-time employees = 95%
OR
5% of 6,600 = 330 and 95% of 6,600 = 6,270

	Number of Employees				
Parent Company's 5 subsidiary companies	**2005**	**2006**	**2007**	**2008**	**2009**
Subsidiary 1	1,538	1,584	1,573	1,585	1,614
Subsidiary 2	1,107	1,084	1,060	1,068	962
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Subsidiary 4	1,505	1,495	1,528	1,548	1,583
Subsidiary 5	1,010	980	946	997	1,029
Parent company: Employees working part-time (%)	12.0	8.1	8.0	5.4	5.0

Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Step 3 *– Calculate the difference in the % of part-time employees to full-time employees*
95% - 5% = 90%
Step 4 *– Calculate the difference*
6,600 x 90% = 5,940
OR
6,270 - 330 = 5,940
Thus the correct answer is (E) 5,940

Laptop model	COSTS		UK Price (£)	Sale price as fraction of normal UK price
	Manufacturing cost (£)	Design cost (£)		
Adelphi	165	60	400	1/2
Adele	140	90	350	3/4
Faze	120	60	380	2/5
Stunn	145	115	420	1/2
Brete	195	130	650	2/3

Q6 For which laptop, or laptops, is the difference between the manufacturing cost and the design cost less than 20% of the manufacturing cost?

(A) Brete
(B) Stunn and Adelphi
(C) Adelphi
(D) Stunn
(E) None of these

Answer:

Step 1: *Calculate the % difference between the manufacturing cost and the design cost (relative to manufacturing cost) for each laptop as shown below:*

Faze	*(120 - 60)/120 = 50%*
Brete	*(195 - 130)/195 = 33%*
Adele	*(140 - 90)/140 = 36%*
Stunn	*(145 - 115)/145 = 21%*
Adelphi	*(165 - 60)/165 = 64%*

Thus the correct answer is (E) None of these

Laptop model	COSTS		UK Price (£)	Sale price as fraction of normal UK price
	Manufacturing cost (£)	Design cost (£)		
Adelphi	165	60	400	1/2
Adele	140	90	350	3/4
Faze	120	60	380	2/5
Stunn	145	115	420	1/2
Brete	195	130	650	2/3

Q7 Put the laptop models in order of increasing mark-up (Mark-up = Price – Costs).

(A) Adele, Adelphi, Stunn, Faze, Brete
(B) Adele, Stunn, Brete, Adelphi, Faze
(C) Adele, Stunn, Adelphi, Faze, Brete
(D) Stunn, Adele, Adelphi, Brete, Faze
(E) Adele, Stunn, Adelphi, Brete, Faze

Answer:

Step 1: *For each laptop model calculate the total costs, then deduct this from the price, as shown below:*

	Total Cost	*Mark-up*
Adelphi	*165 + 60 = 225*	*400 – 225 = 175*
Adele	*140 + 90 = 230*	*350 – 230 = 120*
Faze	*120 + 60 = 180*	*380 – 180 = 200*
Stunn	*145 + 115 = 260*	*420 – 260 = 160*
Brete	*195 + 130 = 325*	*650 – 325 = 325*

Thus the correct Answer is (C) Adele, Stunn, Adelphi, Faze, Brete

Laptop model	COSTS		UK Price (£)	Sale price as fraction of normal UK price
	Manufacturing cost (£)	Design cost (£)		
Adelphi	165	60	400	1/2
Adele	140	90	350	3/4
Faze	120	60	380	2/5
Stunn	145	115	420	1/2
Brete	195	130	650	2/3

Q8 If the same number of each model was sold last month and total sales were £220,000, how many of each model were sold? Prices have remained the same.

(A) 200
(B) 2510
(C) 100
(D) 2150
(E) Cannot Say

Answer:

Step 1: *Calculate the total sales value of one of each type of laptop*
400 + 350 + 380 + 420 + 650 = 2200
Step 2: *Divide total monthly sales by this number*
220,000/2200 = 100
Thus the correct answer is (C) 100

Laptop model	COSTS		UK Price (£)	Sale price as fraction of normal UK price
	Manufacturing cost (£)	Design cost (£)		
Adelphi	165	60	400	1/2
Adele	140	90	350	3/4
Faze	120	60	380	2/5
Stunn	145	115	420	1/2
Brete	195	130	650	2/3

Q9 Which of the following would generate the highest total amount at the sale prices shown?

(A) 75 Adele laptops on sale
(B) 150 Adele laptops at a further 60% reduction to the sale price
(C) 50 Faze and 50 Stunn laptops on sale
(D) 45 Brete laptops on sale
(E) 90 Stunn laptops on sale

Answer:

Step 1: *Calculate the sales price for the 4 laptops that are listed as possible answer options, using the column giving sale price fraction of normal price;*

	Sale Price (£)
Adele	*= 350 x 3/4 = 262.5*
Faze	*= 380 x 2/5 = 152*
Stunn	*= 420 x 1/2 = 210*
Brete	*= 650 x 2/3 = 433.33*

Step 2: *Go through answer options (A) to (E) calculating the total amount*
(A) 75 Adele laptops = 75 x 262.5 = £19,687.50
(B) 150 Adele laptops at a price further reduced by 60% = 40% x 150 x 262.5 = £15,750
(C) 50 Faze and 50 Stunn laptops = 50 x (152 + 210) = £18,100
(D) 45 Brete laptops = 45 x 433.33 = £19,499.85
(E) 90 Stunn laptops = 90 x 210 = £18,900.00
Thus the correct answer is (A) 75 Adele laptops

Laptop model	COSTS		UK Price (£)	Sale price as fraction of normal UK price
	Manufacturing cost (£)	Design cost (£)		
Adelphi	165	60	400	1/2
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Q10 The current exchange rate for US Dollars to the Pound is 1.62 USD to 1 Pound. How much would it cost a customer in the USA to purchase a Faze laptop once a discount of 12% has been applied? Assuming that the USA prices are equivalent to that in the UK and do not include a sale price fraction.

(A) $612.89
(B) $590.47
(C) $574.66
(D) $541.73
(E) $523.52

Answer:

Step 1: *Multiply the UK sale price for a Faze laptop by the exchange rate (1.62) in order to get the equivalent price in US Dollars. 380 x 1.62 = 615.6*
Step 2: *Then multiply this figure by 0.88 to find the cost once the 12% discount has been applied. 615.6 x 0.88 = 541.728*
Thus the correct answer is (D) $541.73

Online Monthly Average	Number of people searching (1000s)	Total Searches (millions)	% of people searching	
			Selling goods/services	Buying goods/services
Australia	19,613	2,412	10	32
Ireland	1,146	170	3	28
UK	31,225	3,975	12	22
Italy	14,850	1,855	6	8
Sweden	16,204	9,578	21	42

Goods/services bought online (%)	Household goods	Films/ music	Financial products	Tickets	Holidays
Australia	9	12	3	17	22
Ireland	3	9	2	10	18
UK	13	10	2	9	15
Italy	9	8	3	8	9
Sweden	5	2	1	3	4

Q11 In which country was there the second highest number of people searching who were buying goods/services online?

(A) Australia
(B) Ireland
(C) UK
(D) Italy
(E) Sweden

Answer:

Step 1: *The first table shows the % of people searching buying goods/services, as well as the number of searches. Use these columns to find the total number of people buying per country, as follows:*

	(1000's)
Australia	*32% x 19,613 = 6,276.16*
Ireland	*28% x 1,146 = 320.88*
UK	*22% x 31,225 = 6,869.50*
Italy	*8% x 14,850 = 1,188*
Sweden	*42% x 16,204 = 6,805.68*

Thus the correct answer is (E) Sweden

Online Monthly Average	Number of people searching (1000s)	Total Searches (millions)	% of people searching	
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Italy	9	8	3	8	9
Sweden	5	2	1	3	4

Q12 In which country was there the second lowest number of people searching who were selling goods/services online?

(A) Australia
(B) Ireland
(C) UK
(D) Italy
(E) Sweden

Answer:

Step 1: *The first table shows the % of people searching buying goods/services, as well as the number of searches. Use these columns to find the total number of searchers per country – whilst ensuring that - unlike the previous question – you provide the second lowest number of Searchers.*

	(1000's)
Australia	*10% x 19,613 = 1,961.30*
Ireland	*3% x 1,146 = 34.38*
UK	*12% x 31,225 = 3,747.00*
Italy	*6% x 14,850 = 891.00*
Sweden	*21% x 16,204 = 3,402.84*

Thus the correct answer is (D) Italy

Online Monthly Average	Number of people searching (1000s)	Total Searches (millions)	% of people searching	
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Q13 Of those in the UK that buy goods/services online they spend on average £1.50 per month. Approximately, what is the total annual spend from this group of people?

(A) £125 million
(B) £10 million
(C) £56 million
(D) £124 million
(E) £12.3 million

Tip: make sure you use the number of people actually buying goods/services, as opposed to people just searching.

Answer:

Step 1: Calculate the number of people in the UK searching who bought goods/services online.

People searching	% of searchers Buying goods/services	
31,225,000	22	31,225,000 x 22% = 6,869,500

Step 2: Calculate the annual spend
£1.50 x 6,869,500 x 12 = £123,651,000 = £124 million
Thus the correct answer is (D) £124 million

Online Monthly Average	Number of people searching (1000s)	Total Searches (millions)	% of people searching	
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Q14 If the three countries *I.U.I.* (Ireland, UK, Italy) are grouped together and the other two countries *S.A.* (Sweden, Australia) are also grouped together, what is the difference between the total number of searches per *I.U.I.* country and the total number of searches per *S.A.* country?

(A) None of these
(B) 2,000 million
(C) 3,995 million
(D) 6,000 million
(E) 1,500 million

Answer:

Step 1: *Calculate the I.U.I. countries number of online searches*
170 + 3,975 + 1,855 = 6,000
Step 2: *Calculate the number of Internet searches for the S.A. countries*
2,412 + 9,578 = 11,990
Step 3 *– Calculate the averages I.U.I. = 6,000 / 3 = 2,000 S.A. = 11,990 / 2 = 5,995*
Step 4 *– Calculate the difference between the averages 5,995 – 2,000 = 3,995*
Thus the correct answer is (C) 3,995 million

Online Monthly Average	Number of people searching (1000s)	Total Searches (millions)	% of people searching	
			Selling goods/services	Buying goods/services
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Italy	9	8	3	8	9
Sweden	5	2	1	3	4

Q15 Which country has the lowest number of online searches per person searching?

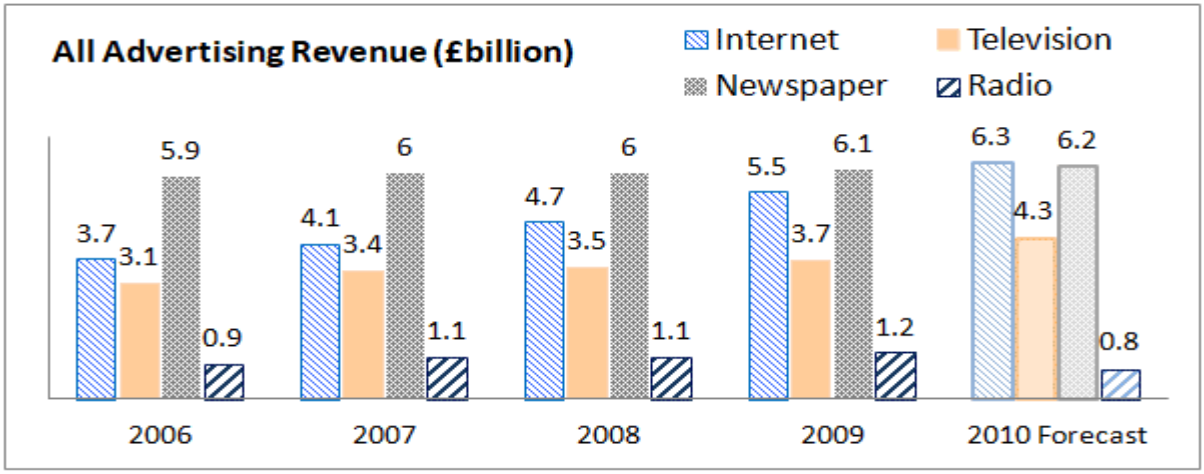
(A) Australia
(B) Ireland
(C) UK
(D) Italy
(E) Sweden

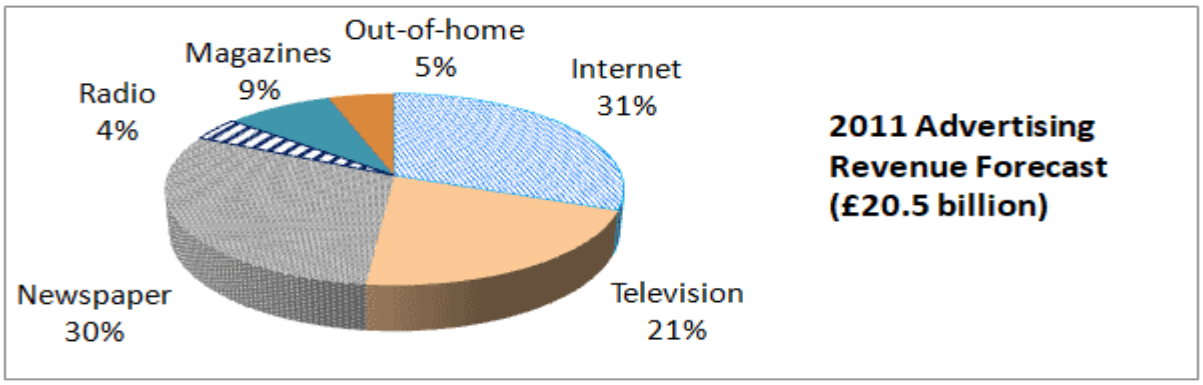
Answer:

Step 1: *Calculate the average number of searches per person searching for each of the countries, as follows:*

	People searching (1000s)	*Total Searches (millions)*	*Average number of searches per person (1000)*
Australia	*19,613*	*2,412*	*2,412,000/19,613 = 122.98*
Ireland	*1,146*	*170*	*170,000/1,146 = 148.3*
UK	*31,225*	*3,975*	*3,975,000/31,225 = 127.3*
Italy	*14,850*	*1,855*	*1,855,000/14,850 = 124.92*
Sweden	*16,204*	*9,578*	*9,578,000/16,204 = 591.09*

Thus the correct answer is (A) Australia





Q16 Which of the following two media are predicted together to generate £6.15 billion of advertising revenue in 2011?

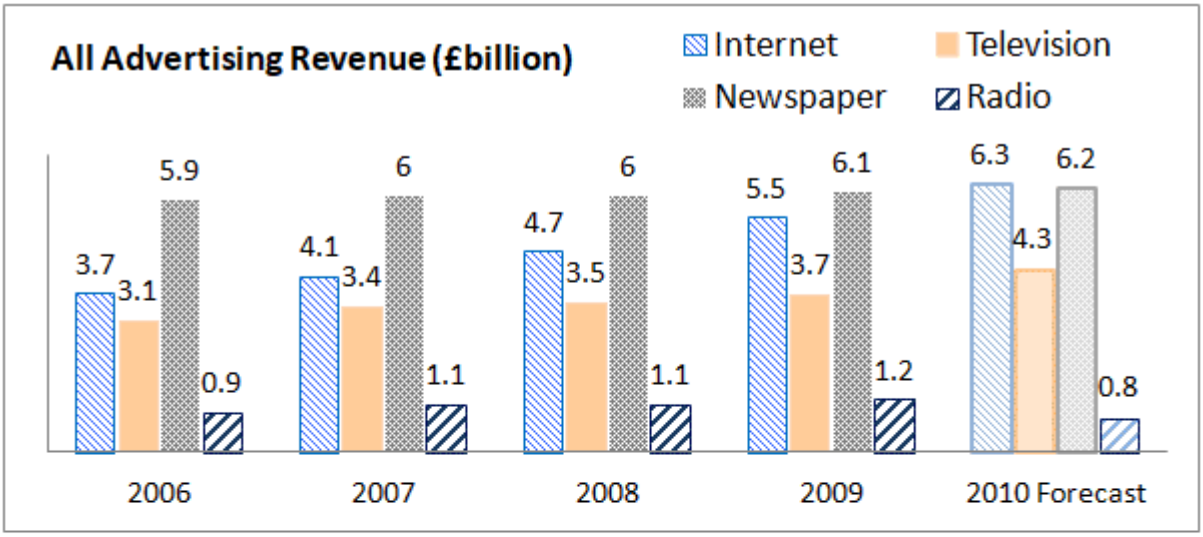
(A) Television and Radio
(B) Newspaper and Radio
(C) Out-of-home and Newspaper
(D) Radio and Magazines
(E) Magazines and Television

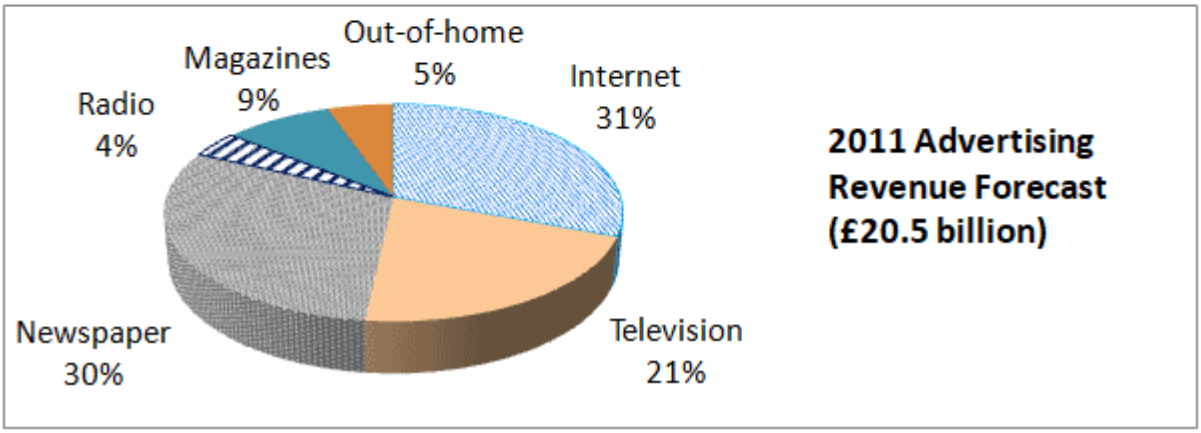
Answer:

Step 1: *Calculate the 2011 advertising revenue using the pie-chart data, look for the combinations which add up to 6.15*

Television	*21% x £20.5 billion = 4.305*
Newspaper	*30% x £20.5 billion = 6.15*
Out-of-home	*5% x £20.5 billion = 1.025*
Radio	*4% x £20.5 billion = 0.82*
Magazines	*9% x £20.5 billion = 1.845*

Thus the correct answer is (E) Magazines and Television



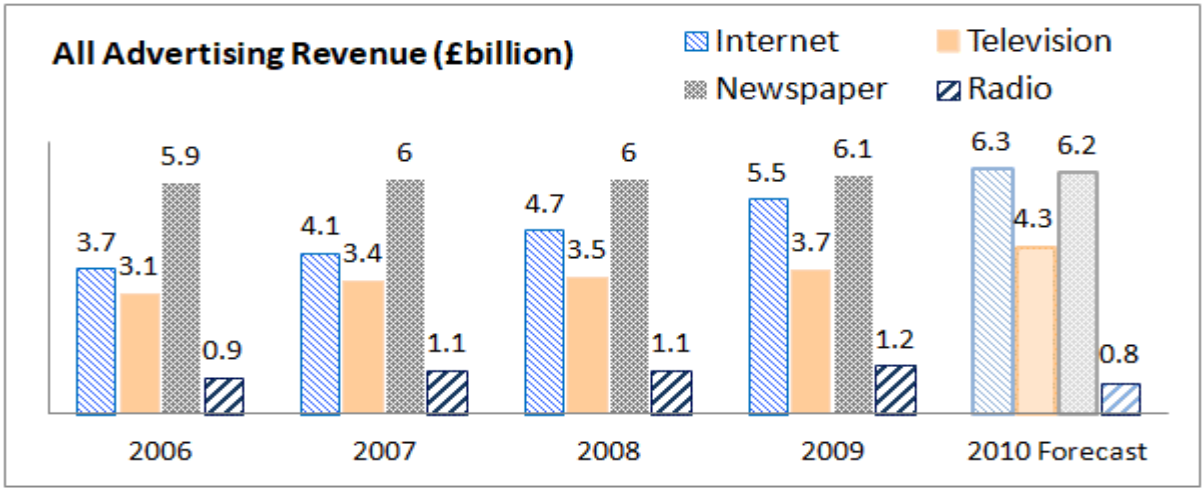


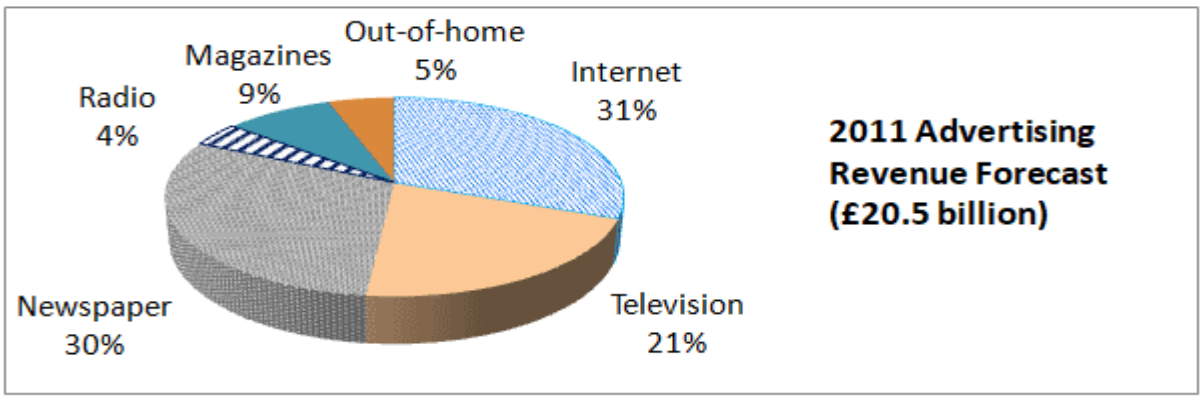
Q17 If the Internet advertising forecast for 2011 is expected to split into mobile: display advertising in a 1:4 ratio, what is the mobile forecast?

(A) £20.5 billion
(B) £1.55 billion
(C) £1.27 billion
(D) £31.00 billion
(E) £7.75 billion
The information that you need is shown in the pie-chart

Answer:

Step 1: *Calculate the Internet advertising forecast for 2011*
31% x £20.5 billion = £6.355 billion
Step 2: *Apply the ratio*
1:4, so mobile = 1/5th of £6.335 billion = £1.27 billion
Thus the correct answer is (C) £1.27 billion

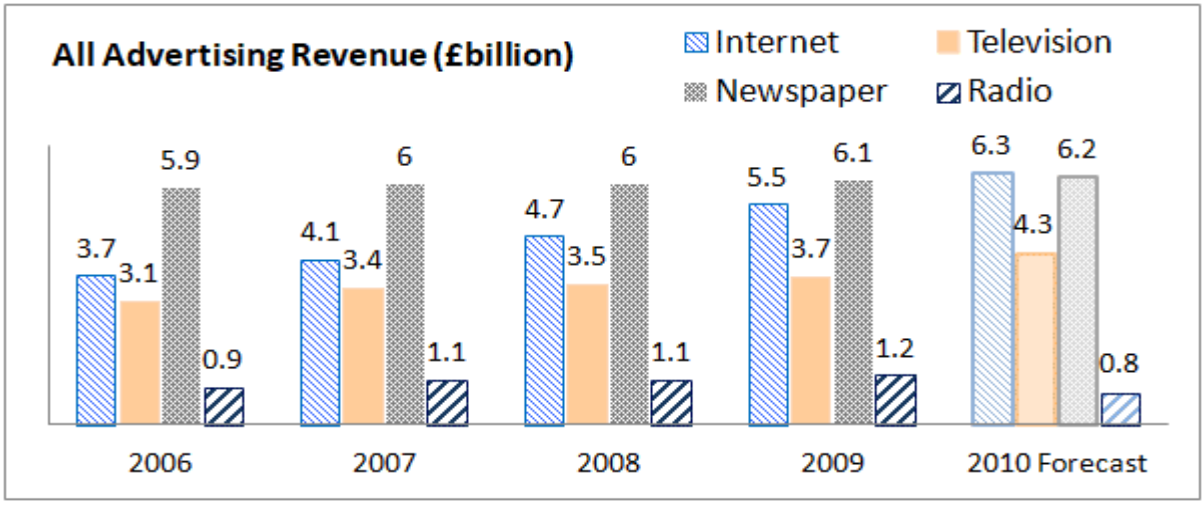


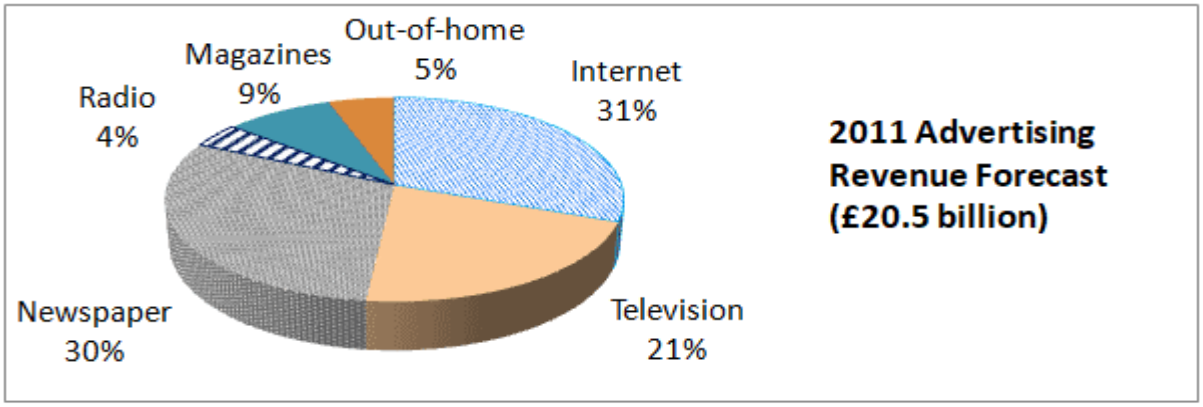


Q18 If the same absolute trends in advertising revenue from 2009 to 2010 continue for 2010 to 2011, then what will be the 2011 advertising revenue for Television and Internet combined?

(A) £8.1 billion
(B) £16.2 billion
(C) £21.2 billion
(D) £12 billion
(E) £10.6 billion

Answer:
Step 1: *Calculate the 2009-2010 change in Television and Internet combined*
Television: 4.3 – 3.7 = 0.6 increase
Internet: 6.3 – 5.5 = 0.8 increase
Television and Internet combined = 1.4 increase
Step 2: *Apply the same change to the 2010 total for Television and Internet combined*
6.3 + 4.3 +1.4 = 12
Thus the correct answer is (D) £12 billion





Q19 In which year, or years, was Television advertising revenue less than 22.5% of the year's total advertising revenue?

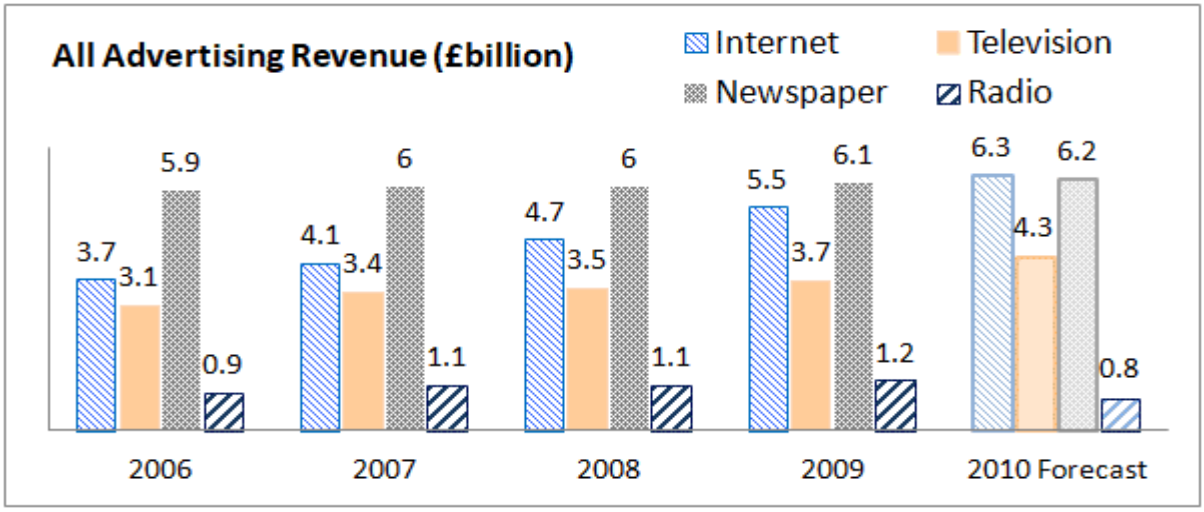
(A) Cannot Say
(B) 2008 and 2006
(C) 2006
(D) 2009 and 2008
(E) 2009

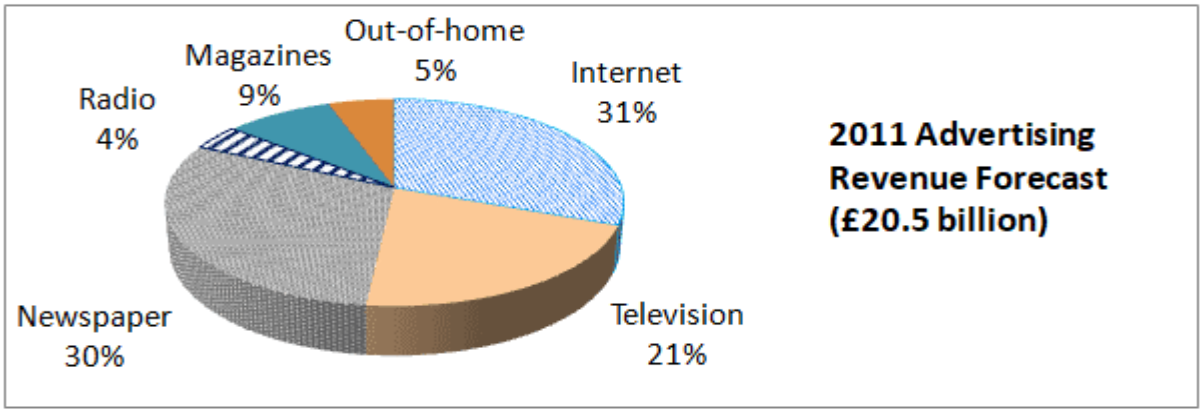
Answer:

Step 1: *Calculate Television's % of the total revenue for each of the four years given as answer options;*

	Television Revenue	*Total Revenue*	*% of total revenue*
2006	*3.1*	*13.6*	*22.8*
2007	*3.4*	*14.6*	*23.3*
2008	*3.5*	*15.3*	*22.9*
2009	*3.7*	*16.5*	*22.4*

Thus the correct answer is (E) 2009



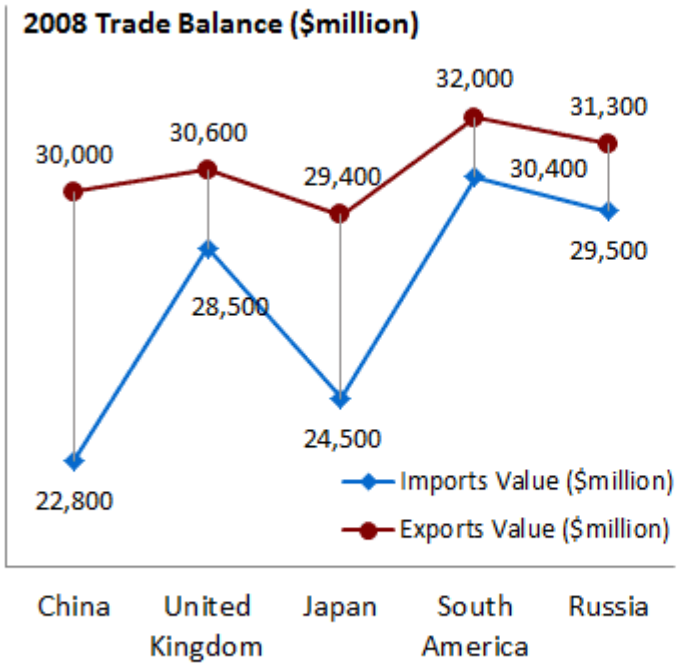


Q20 If in 2009 an external market force had reduced the year's advertising revenue from Newspapers by 10% and from the Internet by 20%, then what was the total 2009 advertising revenue?

(A) None of these
(B) £9.89 billion
(C) £11.6 billion
(D) £10.44 billion
(E) £14.79 billion

Answer:

Step 1: *Calculate the adjusted Newspaper revenue*
6.1 x 90% = 5.49
Step 2: *Calculate the adjusted Internet revenue*
5.5 x 80% = 4.4
Step 3 *– Calculate the adjusted total 2009 advertising revenue*
5.49 + 4.4 + 3.7 (television) + 1.2 (radio) = 14.79
Thus the correct answer is (E) £14.79 billion



2009 Trade Balance*	
	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

* Trade balance = (Exports Value) – (Imports Value)

Q21 Of the regions shown what was the difference between the highest and the lowest trade balance in 2008?

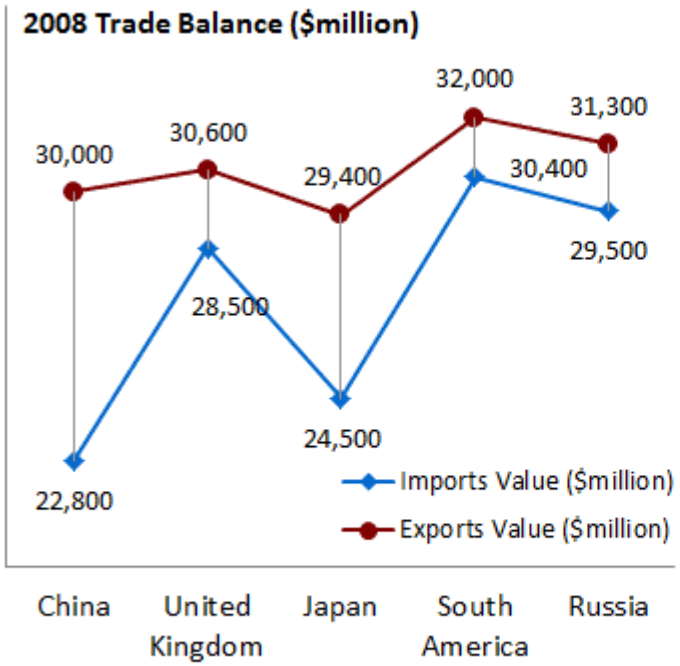
(A) None of these
(B) $5,100 million
(C) $510 million
(D) $5,400 million
(E) $5,600 million

Answer:

Step 1: *Use the graph (i.e. 2008 figures) to calculate the trading balance (exports – imports) for each region*

	Exports – imports ($million)
China	*30,000 – 22,800 = 7,200*
United Kingdom	*30,600 – 28,500 = 2,100*
Japan	*29,400 – 24,500 = 4,900*
South America	*32,000 – 30,400 = 1,600*
Russia	*31,300 – 29,500 = 1,800*

Step 2: *Calculate the difference between the highest and the lowest trading balance*
7,200 – 1,600 = $5,600 million
Thus the correct answer is (E) $5,600 million



2009 Trade Balance*

	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

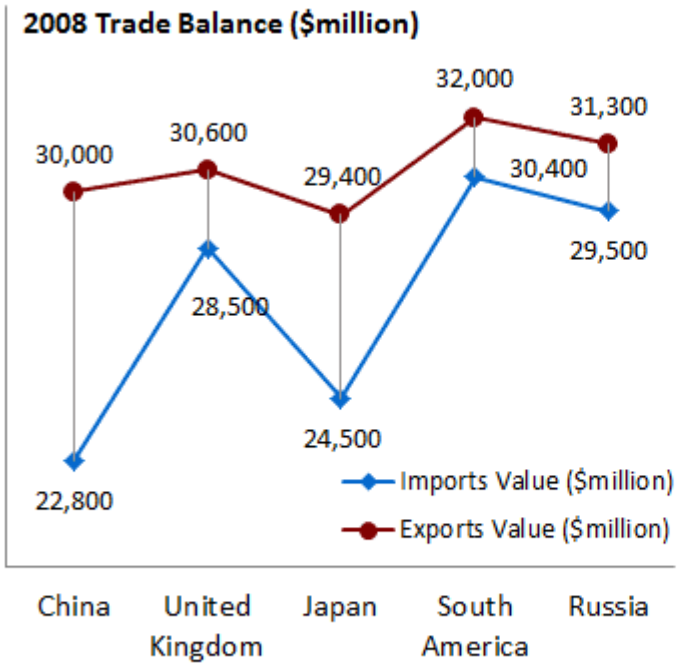
* Trade balance = (Exports Value) – (Imports Value)

Q22 If Japan's exports value increased by 1/5th between 2008 and 2009 then what was Japan's imports value in 2009?

(A) Cannot Say
(B) $29,400 million
(C) $23,560 million
(D) $25,560 million
(E) $29,440 million

Answer:

Step 1: *Use the graph to obtain the 2008 exports value = 29,400*
Step 2: *Add 1/5th to find the 2009 exports value*
29,400 x 1.2 = 35,280
***Step 3** - Use the table to obtain the 2009 trade balance = 5,840*
Japan's imports value in 2009 = 35,280 – 5,840 = $29,440 million
Thus the correct answer is (E) $29,440 million



2009 Trade Balance*	
	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

* Trade balance = (Exports Value) – (Imports Value)

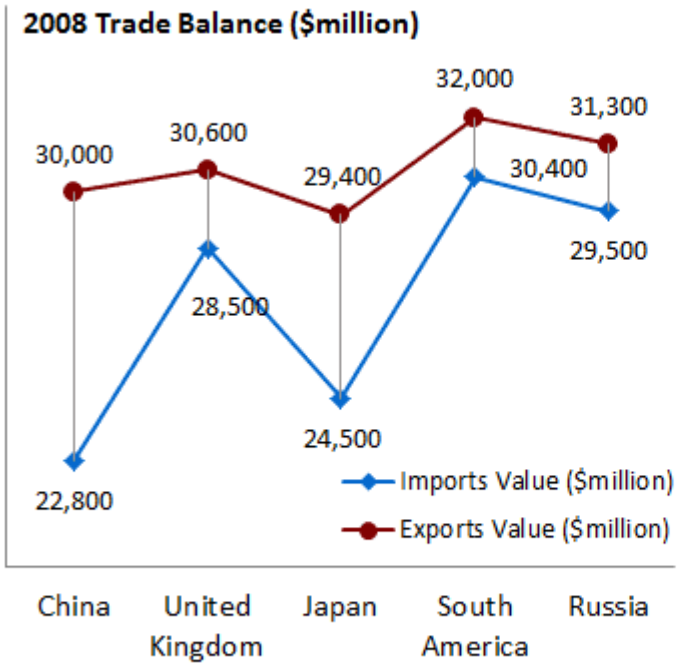
Q23 Compared to 2009, the UK's trade balance is expected to increase by 3.5% in 2010 and China's trading balance is expected to decrease by 4.4%. What is the difference between the 2010 trade balance forecasts for these countries (to the nearest $million)?

(A) $14,405 million
(B) $15,000 million
(C) $16,000 million
(D) $15,702 million
(E) $17,000 million

Answer:

Step 1: *Calculate the increase for the UK and the decrease for China*
UK: 103.5% x 1,825 = 1,888.875
China: 95.6% x 18,400 = 17,590.4
Step 2: *Calculate the difference*
17,590.4 - 1,888.875 = $15,701.525 (million $)

***Tip** - These numbers are already in million $, so don't be tempted to round the answer to (C) $16,000 million.*
Thus the correct answer is (D) $15,702 million



2009 Trade Balance*

	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

* Trade balance = (Exports Value) – (Imports Value)

Q24 Which region or regions have experienced a decrease in their trade balance between 2008 and 2009?

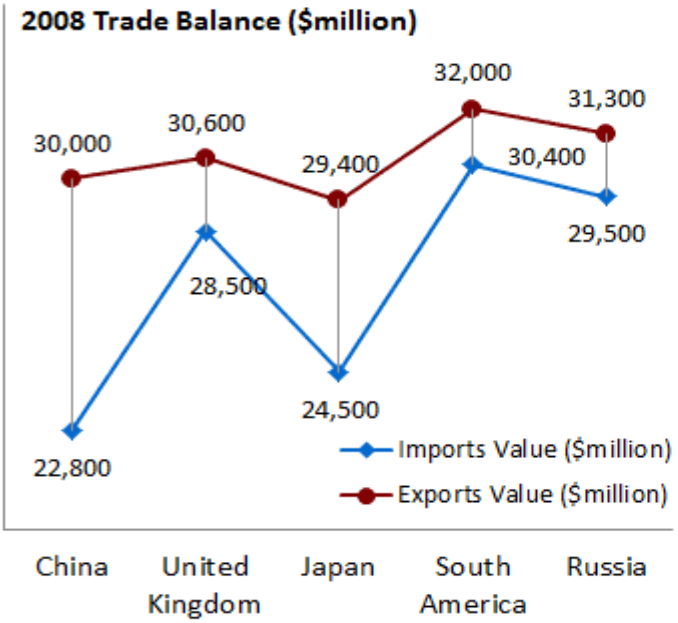
(A) South America, United Kingdom
(B) United Kingdom, Russia
(C) South America, Russia
(D) South America
(E) Russia

Answer:

Step 1: *Using the trade balance figures for 2008 from the earlier question, calculate the change in trade balances for each region between 2008 and 2009*

China	*18,400 – 7,200 = 11,200 increase*
United Kingdom	*1,825 – 2,100 = 275 decrease*
Japan	*5,840 – 4,900 = 940 increase*
South America	*1,950 – 1,600 = 350 increase*
Russia	*1,200 – 1,800 = 600 decrease*

Thus the correct answer is (B) United Kingdom, Russia



2009 Trade Balance*

	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

* Trade balance = (Exports Value) – (Imports Value)

Q25 What is the trading balance range (highest minus lowest) for the five regions between 2008-2009?

(A) $1,200 million – $18,400 million
(B) $5,400 million
(C) $17,200 million
(D) $1,600 million – $18,400 million
(E) $1,800 million – $7,200 million

Answer:

Step 1: *To save time you can use the trading balance figures for 2008 from the earlier question. Then calculate the range across both years.*

	2008 ($million)	*2009 ($million)*
China	*7,200*	*18,400*
United Kingdom	*2,100*	*1,825*
Japan	*4,900*	*5,840*
South America	*1,600*	*1,950*
Russia	*1,800*	*1,200*

Step 2: *The lowest and the highest values are 1,200 and 18,400 respectively.*
Tip: remember the question defined the 'range' as highest minus lowest, as is often convention in finance and accounting professions. Answering with the highest and lowest numbers is not what the question asked for.
Thus the correct answer is (C) $17,200 million

	Annual Birth rate	Annual births		Annual birth rate for sets of twins
	(per 1000 of total population)	Male	Female	(as a % of annual births)
COUNTRY				
Scotland	12.2	28,693	27,086	1.6
Northern Ireland	14.8	13,515	12,934	1.9
Wales	12.5	18,640	16,800	1.25
REGION				
Inner London	16.4	24,735	23,461	1.7
Outer London	15.1	35,811	34,189	2
South West	12	30,258	28,747	1.8
South East	12.3	53,141	50,099	1.8
East	12.1	34,745	32,564	2

Q26 If the number of annual births are distributed evenly across the year and they remain constant at the levels shown, then how many months will it take for Outer London‘s population to increase by 245,000? (Ignoring death rate)

(A) 34
(B) 36
(C) 38
(D) 40
(E) 42

Answer:

Step 1: *Calculate the total annual births*
35,811 + 34,189 = 70,000
Step 2: *Calculate the number of years and months required to reach 245,000*
245,000 / 70,000 = 3.5 years = 42 months
Thus the correct answer is (E) 42

	Annual Birth rate	Annual births		Annual birth rate for sets of twins
	(per 1000 of total population)	Male	Female	(as a % of annual births)
COUNTRY				
Scotland	12.2	28,693	27,086	1.6
Northern Ireland	14.8	13,515	12,934	1.9
Wales	12.5	18,640	16,800	1.25
REGION				
Inner London	16.4	24,735	23,461	1.7
Outer London	15.1	35,811	34,189	2
South West	12	30,258	28,747	1.8
South East	12.3	53,141	50,099	1.8
East	12.1	34,745	32,564	2

Q27 Which country or countries shown have a population of less than 2.9 million people?

(A) Wales, Scotland
(B) Northern Ireland, Wales, Scotland
(C) Scotland
(D) Northern Ireland, Wales
(E) Cannot Say

Answer:

Step 1: *A country's population can be calculated using the Annual Birth rate - which is given per 1000 of total population – and the number of live births that when combined make up the annual birth rate.*

	Annual Birth rate (per 1000 of total population)	*Number of births*	*Population*
Scotland	*12.2*	*28,693 + 27,086 = 55,779*	*1000 x 55,779/12.2 = 4,572,049.1*
Northern Ireland	*14.8*	*13,515 + 12,934 = 26,449*	*1000 x 26,449/14.8 = 1,787,094.5*
Wales	*12.5*	*18,640 + 16,800 = 35,440*	*1000 x 35,440/12.5 = 2,835,200*

Thus the correct answer is (D) Northern Ireland, Wales

	Annual Birth rate	Annual births		Annual birth rate for sets of twins
	(per 1000 of total population)	Male	Female	(as a % of annual births)
COUNTRY				
Scotland	12.2	28,693	27,086	1.6
Northern Ireland	14.8	13,515	12,934	1.9
Wales	12.5	18,640	16,800	1.25
REGION				
Inner London	16.4	24,735	23,461	1.7
Outer London	15.1	35,811	34,189	2
South West	12	30,258	28,747	1.8
South East	12.3	53,141	50,099	1.8
East	12.1	34,745	32,564	2

Q28 What is the population of Inner and Outer London combined (to the nearest 100,000)?

(A) 8,000,000
(B) 4,600,000
(C) 3,000,000
(D) 7,600,000
(E) None of these

	Annual Birth rate (per 1000 of total population)	*Number of births*	*Population*
Inner London	*16.4*	*24,735 + 23,461 = 48,196*	*1000 x 48,196/16.4 = 2,938,780.4*
Outer London	*15.1*	*35,811 + 34,189 = 70,000*	*1000 x 70,000/15.1 = 4,635,761.5*

Answer:

Step 1: *Inner and Outer London population = 2,938,780.4 + 4,635,761.5 = 7,574,541.9*
Thus the correct answer is (D) 7,600,000

	Annual Birth rate	Annual births		Annual birth rate for sets of twins
	(per 1000 of total population)	Male	Female	(as a % of annual births)
COUNTRY				
Scotland	12.2	28,693	27,086	1.6
Northern Ireland	14.8	13,515	12,934	1.9
Wales	12.5	18,640	16,800	1.25
REGION				
Inner London	16.4	24,735	23,461	1.7
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South West	12	30,258	28,747	1.8
South East	12.3	53,141	50,099	1.8
East	12.1	34,745	32,564	2

Q29 How many babies are born on average as twin births in Wales over five years? (Assume that the annual birth rate and number of births remains the same across the five years).

(A) 4,430
(B) 886
(C) 2,215
(D) 443
(E) Cannot Say

Answer:

Step 1: *Calculate the total number of births in Wales*
18,640 + 16,800 = 35,440
Step 2: *Calculate the annual number of twin births*
35,440 x 1.25% = 443
Step 3 *– Number of babies over 5 years*
443 x 2 x 5 = 4,430
Thus the correct answer is (A) 4,430

	Annual Birth rate	Annual births		Annual birth rate for sets of twins
	(per 1000 of total population)	Male	Female	(as a % of annual births)
COUNTRY				
Scotland	12.2	28,693	27,086	1.6
Northern Ireland	14.8	13,515	12,934	1.9
Wales	12.5	18,640	16,800	1.25
REGION				
Inner London	16.4	24,735	23,461	1.7
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South West	12	30,258	28,747	1.8
South East	12.3	53,141	50,099	1.8
East	12.1	34,745	32,564	2

Q30 What percent of births are male across the 5 Regions shown?

(A) 49.5%
(B) 50%
(C) 50.5%
(D) 51%
(E) 51.4%

Answer:

Step 1: *Calculate the total number of male births*
24,735 + 35,811 +30,258 + 53,141 + 34,745 = 178,690
Step 2: *Calculate the total births*
178690 + 23,461 + 34,189 + 28,747 + 50,099 + 32,564 = 347,750
Step 3 *– Put into a %*
100% x (178,690/347,750) = 51.4%
Thus the correct answer is (E) 51.4%

End of test