Numerical Reasoning

Test 3

Solutions Booklet

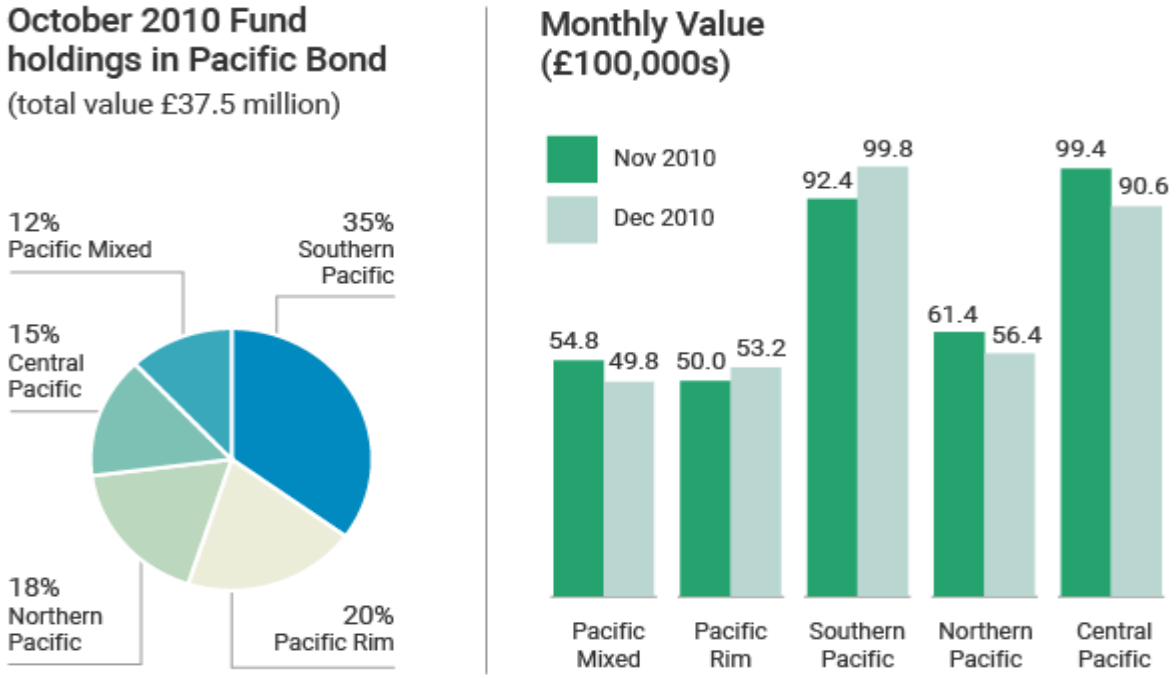
Instructions

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.

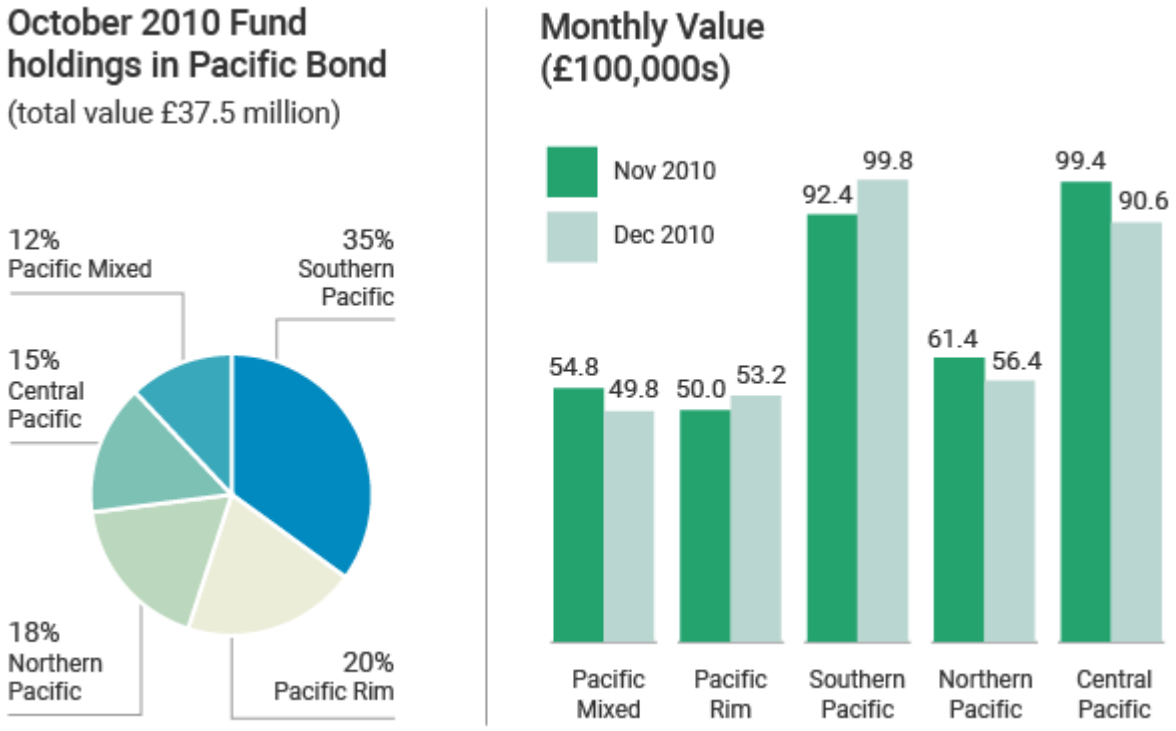
Try to find a time and place where you will not be interrupted during the test. When you are ready, turn to the next page and begin.



Q1 What was the 2010 percentage change in the value of the Pacific Rim holding between October and November (to the nearest percent)?

Answer:
(A) 41% less
(B) 41% more
(C) 36% less
(D) 34% less
(E) 33% less

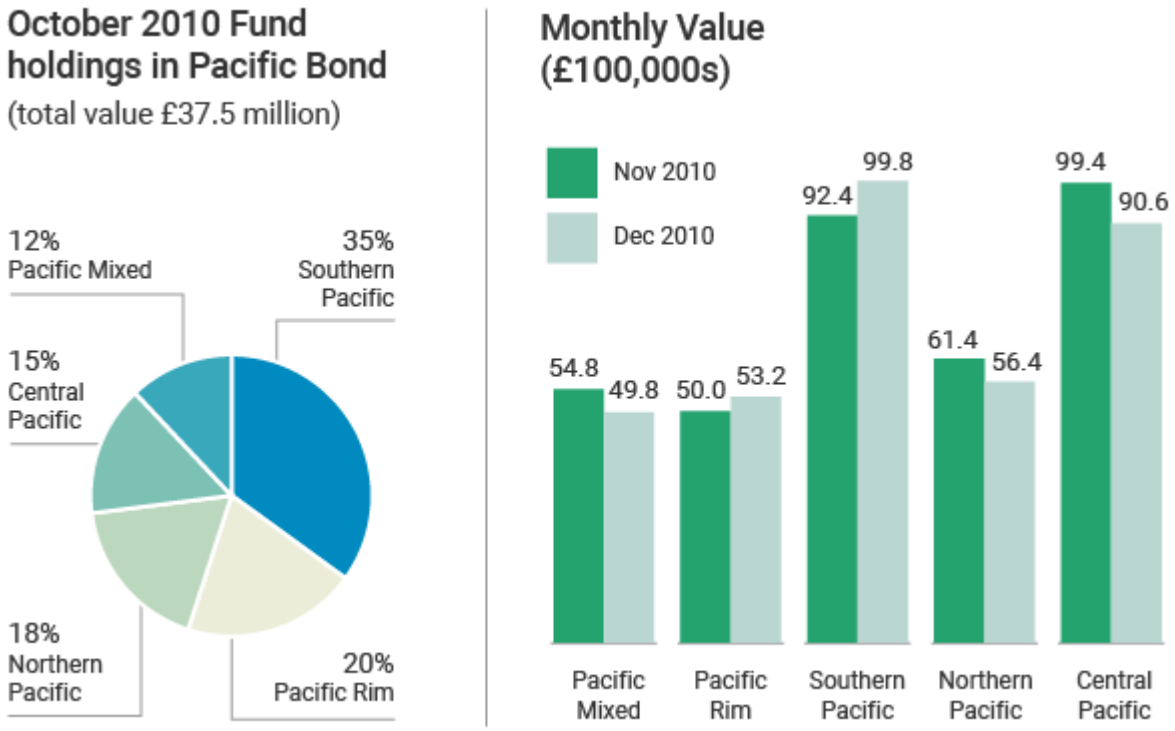
Step 1: *Calculate the Oct value*
The information that you need is shown in the pie-chart
£37.5 million x 20% = £7.5 million
Step 2: *Calculate the Nov value*
The information that you need is shown in the graph
50.0 x £100,000 = £5 million
Step 3: *Calculate the % difference*
7.5 - 5.0 = 2.5
100% x 2.5/7.5 = 33.33% less. Or simply divide 5.0 by 7.5 to get 0.6667, which is a 33.3% reduction.
Thus, the correct answer is (E) 33% less



Q2 What was the ratio of Pacific Rim: Southern Pacific holdings in October 2010?

Answer:
(A) 3:2
(B) 2:3
(C) 4:5
(D) 5:4
(E) 4:7
The information that you need is shown in the pie-chart

Step 1: *Put these October %'s into a ratio*
20%:35% = 20:35
Step 2: *Simplify the ratio, looking at the available answers.*
20:35 = 4:
Thus, the correct answer is (E) 4:7

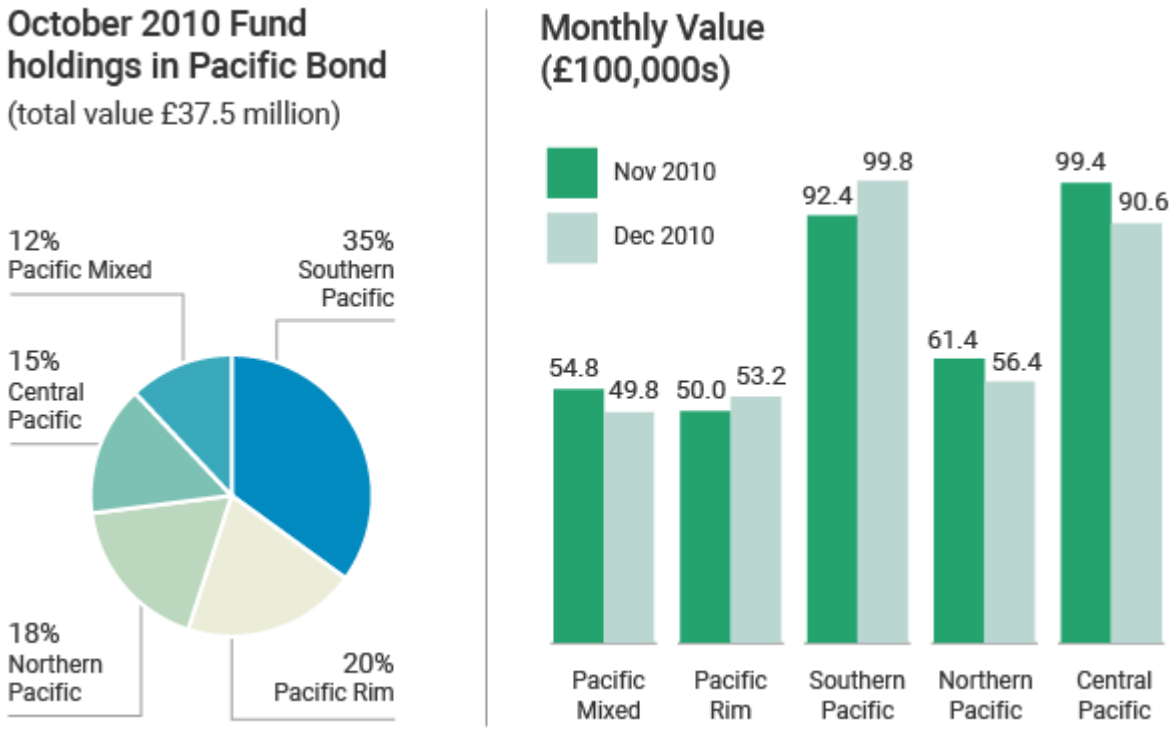


Q3 In October 2010 which two Pacific Bond fund holdings when combined had the same value as Southern Pacific holdings?

Answer:
(A) Northern Pacific and Central Pacific
(B) Central Pacific and Pacific Rim
(C) Pacific Mixed and Pacific Rim
(D) Pacific Mixed and Northern Pacific
(E) Pacific Rim and Northern Pacific
The information that you need is shown in the graph

Step 1: *Look for those holdings that are likely to have a combined value around the 35% mark:*

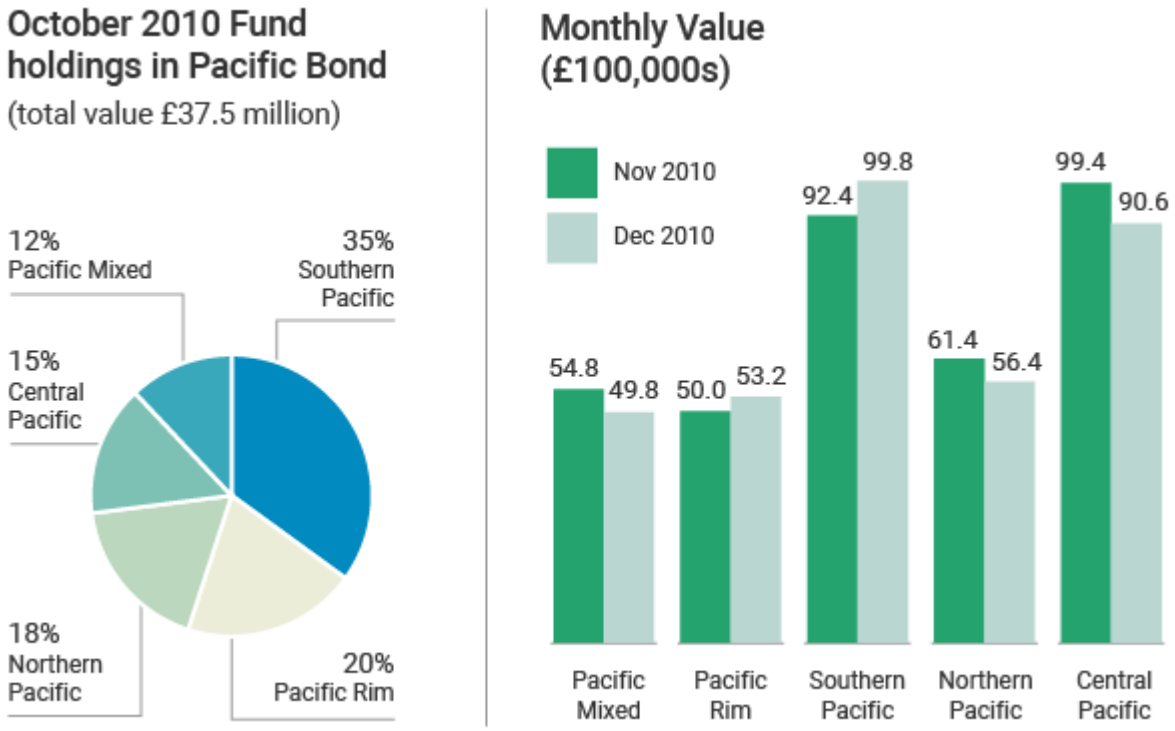
Northern Pacific + Pacific Mixed = 30%
Pacific Rim + Pacific Mixed = 32%
Northern Pacific + Central Pacific = 33%
Pacific Rim + Northern Pacific = 38%
Central Pacific + Pacific Rim = 35%
Thus, the correct answer is (B) Central Pacific and Pacific Rim



Q4 Which of the following represents the largest amount?

Answer:
(A) October's Pacific Mixed holding
(B) Average November value of each of the 5 holdings
(C) November value of holdings in Northern Pacific
(D) 70% of November's value of holdings in Southern Pacific
(E) Average December value of each of the 5 holdings

Step 1:
In this one it is not obvious which ones are going to be wrong and therefore able to be discounted, so we must calculate the value of each option:
(A) October's Pacific Mixed holding = 4.5 million
(B) Average November value of each of the 5 holdings = 7.16 million
(C) November value of holdings in Northern Pacific = 6.14 million
(D) 70% of November's value of holdings in Southern Pacific = 6.47 million
(E) Average December value of each of the 5 holdings = 7 million
Thus, the correct answer is (B) Average November value of each of the 5 holdings



Q5 In October 2010 what fraction of the total Pacific Bond did the Northern Pacific and Pacific Mixed fund holdings represent?

Answer:
(A) 1/5
(B) 1/10
(C) 1/4
(D) 3/10
(E) 2/5
The information that you need is shown in the pie-chart.

Step 1: *Add the Northern Pacific and Pacific Mixed %'s*
18% + 12% = 30%
Step 2: *Express this figure as a fraction*
30 / 100 = 3/10
Thus, the correct answer is (D) 3/10

Western Region - Store location	Number of sales staff	Units sold					
		Week 1		Week 2		Week 3	
		Actual	Target	Actual	Target	Actual	Target
Redcliff	8	20	15	20	25	35	35
Ather	9	30	20	40	25	40	35
Wilkington	5	25	20	18	25	24	30
Trew	8	15	10	14	15	12	15
Tunston	6	5	10	6	15	9	15

Q6 For Weeks 1 and 3, across all 5 stores combined, what was the difference (in units) between Actual and Target sales volumes?

Answer:
(A) 10 over target (Week 1); 10 under target (Week 3)
(B) 10 over target (Week 1); 15 under target (Week 3)
(C) 15 over target (Week 1); 10 under target (Week 3)
(D) 15 over target (Week 1); 15 under target (Week 3)
(E) 20 over target (Week 1); 10 under target (Week 3)

Step 1: *Calculate the total Week 1 and Week 3 sales across the 5 Stores*
Week 1: 20 + 30 + 25 + 15 + 5 = 95
Week 3: 35 + 40 + 24 + 12 + 9 = 120
Step 2: *Calculate the total Week 1 and Week 3 targets across the 5 Stores*
Week 1: 15 + 20 + 20 + 10 + 10 = 75
Week 3: 35 + 35 + 30 + 15 + 15 = 130
Step 3: *Calculate the difference for Weeks 1 and 3*
Week 1: 95 – 75 = 20 over target
Week 3: 120 – 130 = 10 under target
Thus, the correct answer is (E) 20 over target (Week 1); 10 under target (Week 3)

Western Region - Store location	Number of sales staff	Units sold					
		Week 1		Week 2		Week 3	
		Actual	Target	Actual	Target	Actual	Target
Redcliff	8	20	15	20	25	35	35
Ather	9	30	20	40	25	40	35
Wilkington	5	25	20	18	25	24	30
Trew	8	15	10	14	15	12	15
Tunston	6	5	10	6	15	9	15

Q7 Over the three week period, which Store achieved the highest sales per sales staff member?

Answer:
(A) Redcliff
(B) Ather
(C) Wilkington
(D) Trew
(E) Tunston

Step 1: *Calculate each Store's total sales*
Use the Actual sales figures for each of the 3 weeks, as follows:

Redcliff	*20 + 20 + 35 = 75*
Ather	*30 + 40 + 40 = 110*
Wilkington	*25 + 18 + 24 = 67*
Trew	*15 + 14 + 12 = 41*
Tunston	*5 + 6 + 9 = 20*

Step 2: *Calculate each Store's average sales per sales staff member, as follows:*

Redcliff	*75 / 8 = 9.4*
Ather	*110 / 9 = 12.2*
Wilkington	*67 / 5 = 13.4*
Trew	*41 / 8= 5.1*
Tunston	*20 / 6 = 3.3*

Thus, the correct answer is (C) Wilkington

Western Region - Store location	Number of sales staff	Units sold					
		Week 1		Week 2		Week 3	
		Actual	Target	Actual	Target	Actual	Target
Redcliff	8	20	15	20	25	35	35
Ather	9	30	20	40	25	40	35
Wilkington	5	25	20	18	25	24	30
Trew	8	15	10	14	15	12	15
Tunston	6	5	10	6	15	9	15

Q8 Next year staff numbers are to be reduced by 1 at stores with 6 or less staff, and by 2 staff at all other stores. What will be the average monthly target per staff member across all 5 stores if the regional target (across the 5 stores) is £168,000?

Answer:
(A) £5,000
(B) £6,000
(C) £7,000
(D) £8,000
(E) £9,000

Step 1: *Calculate the new staff numbers*

Redcliff	*8 – 2 = 6 staff*
Ather	*9 – 2 = 7 staff*
Wilkington	*5 – 1 = 4 staff*
Trew	*8 – 2 = 6 staff*
Tunston	*6 – 1 = 5 staff*

Step 2: *Calculate the average target per staff member*
Average = target / total number of staff = 168,000 / 28 = £6,000
Thus, the correct answer is (B) £6,000

Western Region - Store location	Number of sales staff	Units sold					
		Week 1		Week 2		Week 3	
		Actual	Target	Actual	Target	Actual	Target
Redcliff	8	20	15	20	25	35	35
Ather	9	30	20	40	25	40	35
Wilkington	5	25	20	18	25	24	30
Trew	8	15	10	14	15	12	15
Tunston	6	5	10	6	15	9	15

Q9 The Western Region's overall sales (£120,000) were in a ratio of 3:2 to the Eastern Region's sales which itself had half the sales of the Northern and Southern Regions combined. What were the total sales of all 4 Regions?

Answer:
(A) £180,000
(B) £200,000
(C) £220,000
(D) £240,000
(E) £360,000

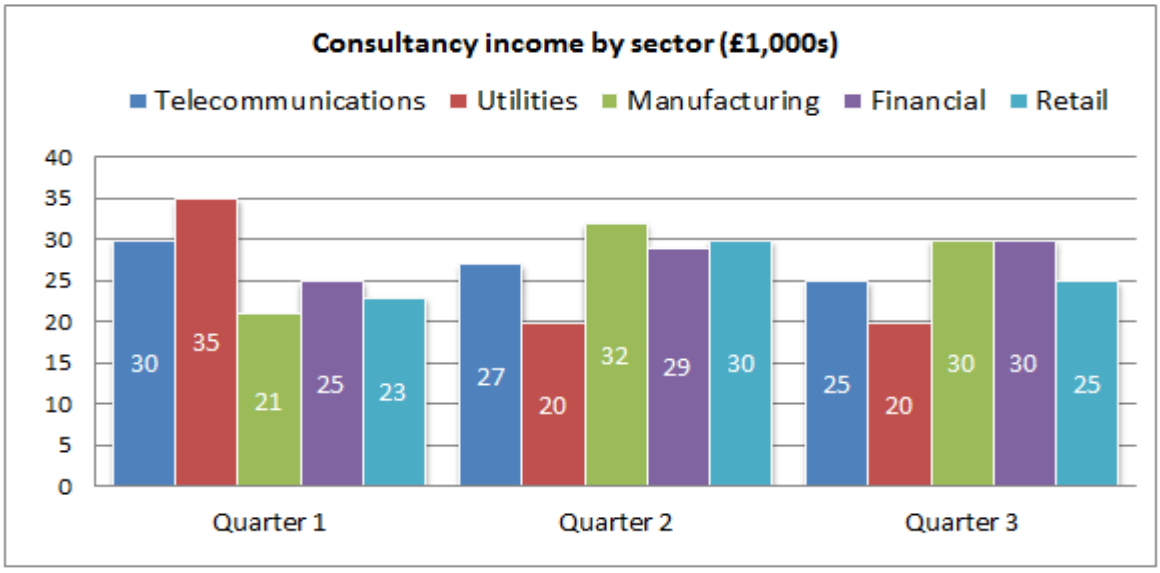
Step 1: *Calculate each Region's sales*
Eastern Region's sales = 2 x 120,000 / 3 = 80,000
Northern + Southern Regions' sales = 80,000 x 2 = 160,000
Step 2: *Calculate the total sales*
120,000 + 80,000 + 160,000 = 360,000
Thus, the correct answer is (E) £360,000

Western Region - Store location	Number of sales staff	Units sold					
		Week 1		Week 2		Week 3	
		Actual	Target	Actual	Target	Actual	Target
Redcliff	8	20	15	20	25	35	35
Ather	9	30	20	40	25	40	35
Wilkington	5	25	20	18	25	24	30
Trew	8	15	10	14	15	12	15
Tunston	6	5	10	6	15	9	15

Q10 All sales in the three week period were based on an average £9.50 reduction in the sales price of the units sold. What was the total saving made by customers who bought units over the 3 week period (to the nearest £100)?

Answer:
(A) £3,000
(B) £3,500
(C) £4,000
(D) £4,500
(E) £5,000

Step 1: *Calculate the total sales*
We could use the working from Q6 to obtain Week 1 and Week 3 sales totals.
Week 2 sales = 20 + 40 + 18 + 14 + 6 = 98
Total sales = Week 1 + Week 2 + Week 3 = 95 + 98 + 120 = 313
Step 2: *Calculate the amount saved*
313 x £9.50 = £2,973.50
Step 3: *(to the nearest £100)*
£2,973.50 = £3,000
Thus, the correct answer is (A) £3,000
Tip: *when summing numbers from a column or row, be careful not to take numbers from an adjacent category. It is also a good idea to enter the numbers as you go straight into your calculator, instead of writing out the sum on your rough paper then performing the calculation. This will reduce the number of stages in your working and save time and reduce the potential for input errors.*



Manufacturing sector - Consultancy income by consultant

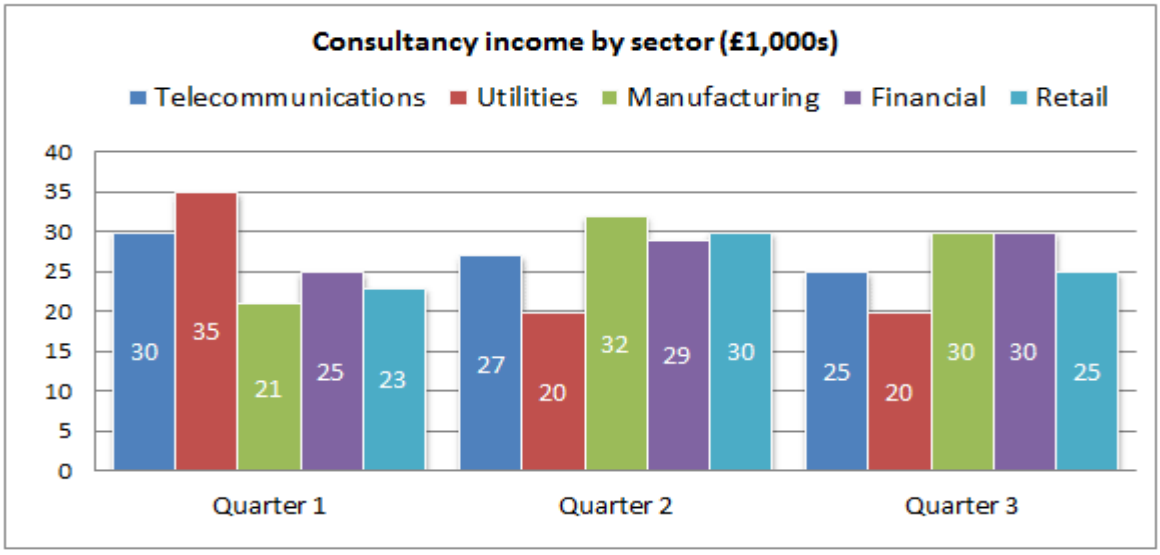
Consultant	Quarter 1	Quarter 2	Quarter 3	Quarter 4
David	4,000	3,500	5,000	4,000
Peter	6,000	6,500	7,000	10,500
Sarah	6,000	9,000	5,500	3,000
Jane	4,000	4,500	7,500	4,500
Harry	1,000	4,500	5,000	6,500

Q11 Which sector experienced the highest sales for Quarters 1, 2 and 3 combined?

Answer:
(A) Telecommunications
(B) Utilities
(C) Manufacturing
(D) Financial
(E) Retail
The information that you need is shown in the graph Consultancy income by sector

Step 1: *Calculate each sector's sales for Quarters 1, 2 and 3 combined*
Telecommunications = 30 + 27 + 25 = 82
Utilities = 35 + 20 + 20 = 75
Manufacturing = 21 + 32 + 30 = 83
Financial = 25 + 29 + 30 = 84
Retail = 23 + 30 + 25 = 78

Thus, the correct answer is (D) Financial



Manufacturing sector - Consultancy income by consultant

Consultant	Quarter 1	Quarter 2	Quarter 3	Quarter 4
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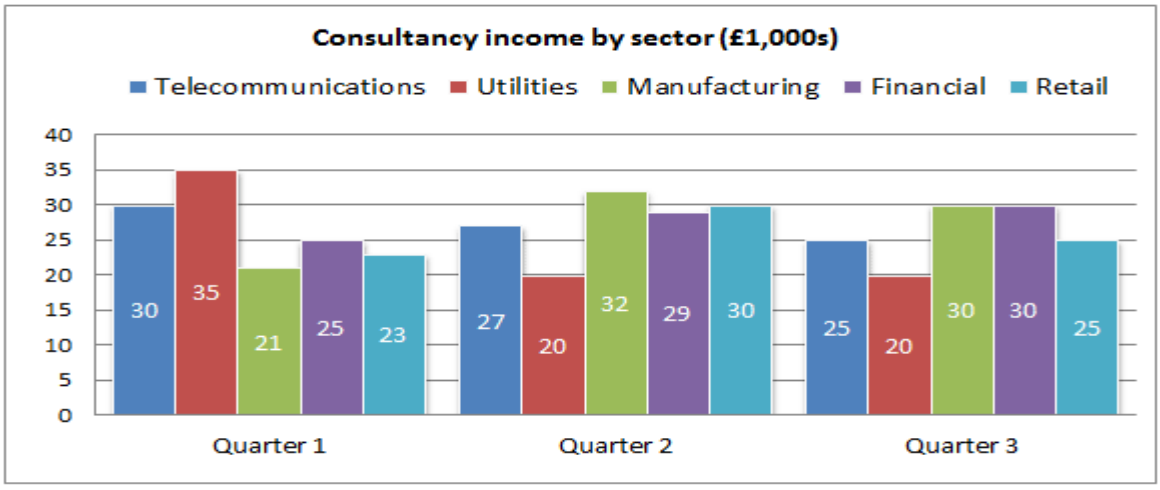
Peter	6,000	6,500	7,000	10,500
Sarah	6,000	9,000	5,500	3,000
Jane	4,000	4,500	7,500	4,500
Harry	1,000	4,500	5,000	6,500

Q12 Quarter 4's income per sector is in the same ratio as Quarter 3, and the consultancy income from the Financial sector is £33,000. What is the consultancy income from the Utilities sector?

Answer:
(A) Can't tell from the data provided
(B) £12,000
(C) £22,000
(D) £25,000
(E) £45,000
The information that you need is shown in the graph Consultancy income by sector

Step 1: *Find the Quarter 3 ratios*
Utilities: Financial = 20:30 = 2:3
Step 2: *Apply this ratio to the Utilities sector*
Utilities income = £33,000 x 2/3 = £22,000
Thus, the correct answer is (C) £22,000



Manufacturing sector - Consultancy income by consultant

Consultant	Quarter 1	Quarter 2	Quarter 3	Quarter 4
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Peter	6,000	6,500	7,000	10,500
Sarah	6,000	9,000	5,500	3,000
Jane	4,000	4,500	7,500	4,500
Harry	1,000	4,500	5,000	6,500

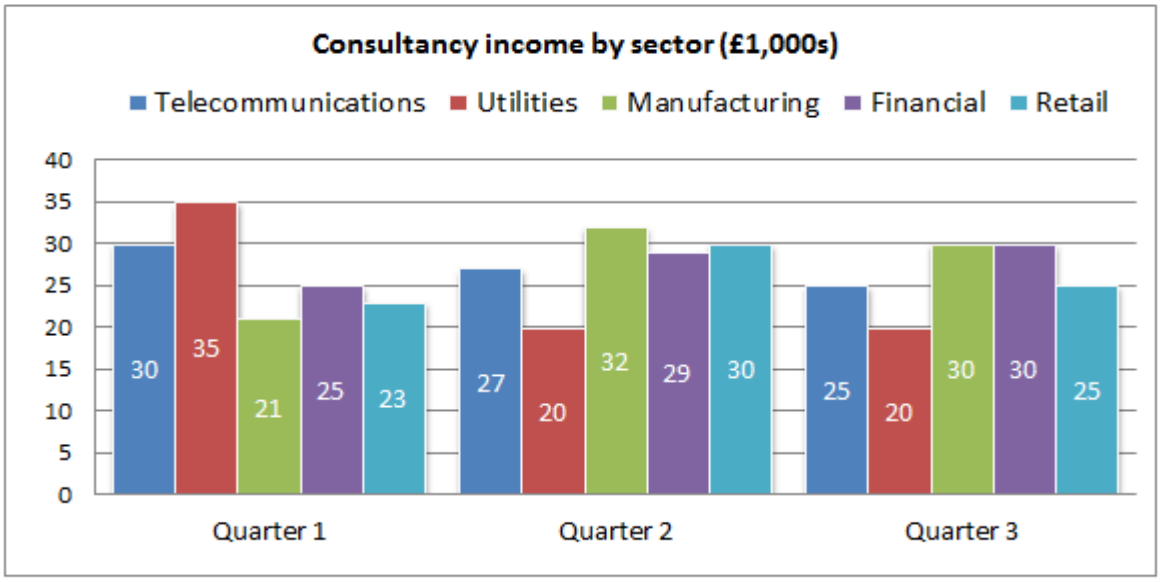
Q13 For Quarters 1 and 3 combined, which two Manufacturing sector consultants had incomes in the ratio 2:3?

Answer:
(A) Harry and David
(B) Sarah and Jane
(C) Harry and Jane
(D) David and Peter
(E) David and Sarah
The information that you need is shown in the table.

Step 1: *Calculate each Consultant's combined Quarter 1 and Quarter 3 income, as shown below:*

Consultant	*Quarter 1*	*Quarter 3*	*Combined*
David	*4,000*	*5,000*	*9,000*
Peter	*6,000*	*7,000*	*13,000*
Sarah	*6,000*	*5,500*	*11,500*
Jane	*4,000*	*7,500*	*11,500*
Harry	*1,000*	*5,000*	*6,000*

The only possible 2:3 ratio is between Harry and David (6,000:9,000)
Thus, the correct answer is (A) Harry and David



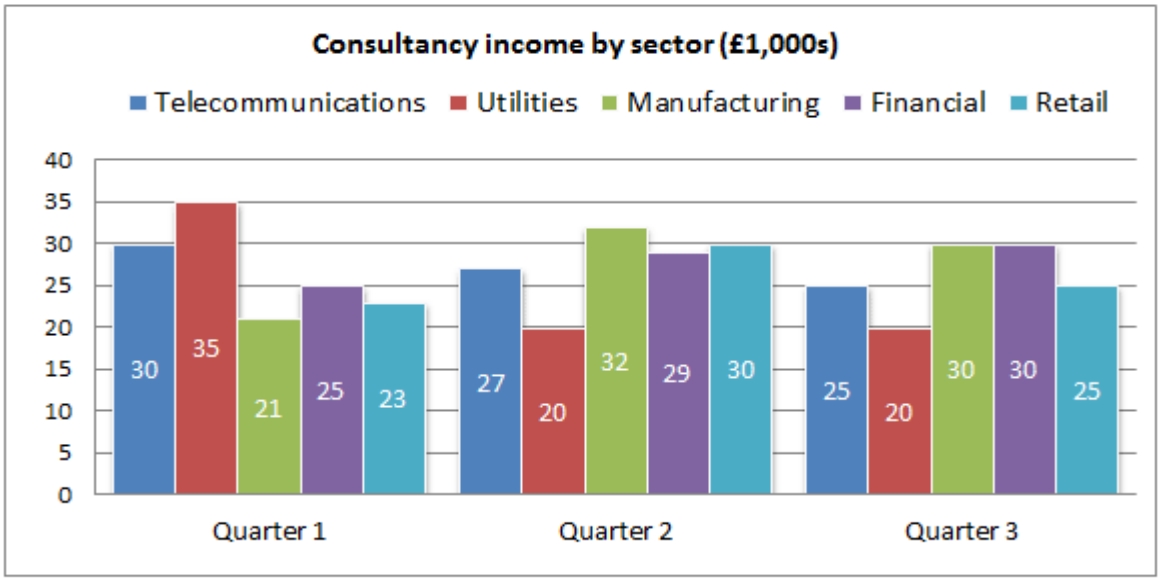
Manufacturing sector - Consultancy income by consultant

Consultant	Quarter 1	Quarter 2	Quarter 3	Quarter 4
David	4,000	3,500	5,000	4,000
Peter	6,000	6,500	7,000	10,500
Sarah	6,000	9,000	5,500	3,000
Jane	4,000	4,500	7,500	4,500
Harry	1,000	4,500	5,000	6,500

Q14 The Manufacturing sector income from the five consultants is supplemented by the work of an associate consultant. What was the associate consultant's income from the Manufacturing sector across Quarters 1 to 3?

Answer:
(A) £3,000
(B) £4,000
(C) £6,000
(D) £8,000
(E) £9,000
The information that you require here is shown in the table.

Step 1: *Calculate the total manufacturing income from the 5 consultants*
Q1 Total = 21,000
Q2 Total = 28,000
Q3 Total = 30,000
Total income (Quarters 1 to 3) = 79,000
The information that you require next is shown in the graph.



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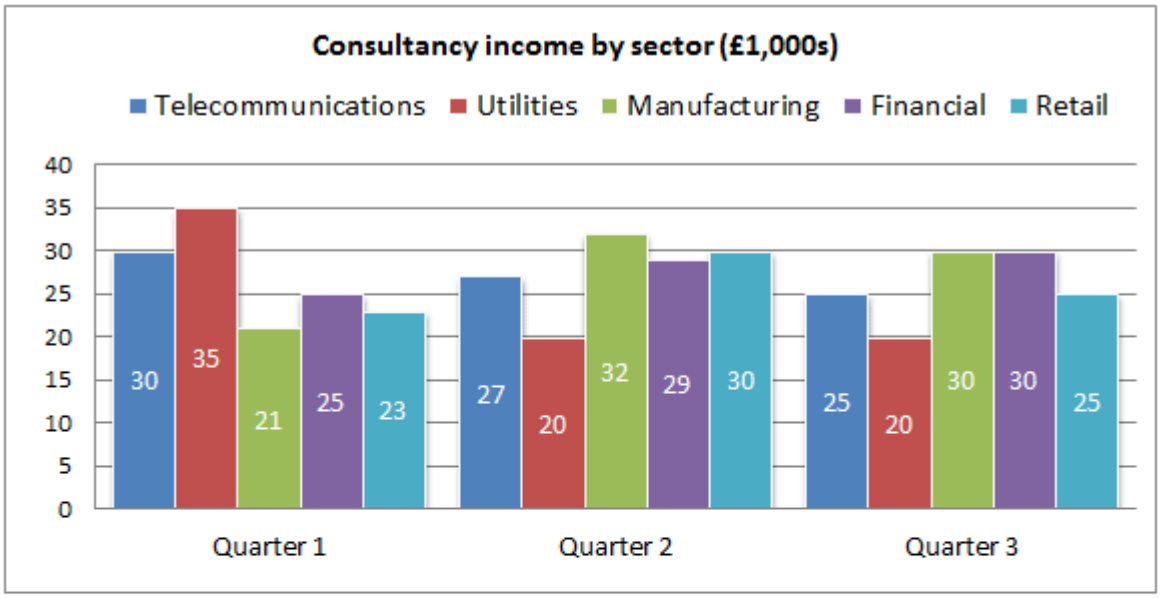
Peter	6,000	6,500	7,000	10,500
Sarah	6,000	9,000	5,500	3,000
Jane	4,000	4,500	7,500	4,500
Harry	1,000	4,500	5,000	6,500

Step 2: *Calculate the overall consultancy income from the manufacturing sector*
21 + 32 + 30 = 83,000
Step 3 *– Calculate the supplementary income*
83,000 – 79,000 = 4,000
Thus, the correct answer is (B) £4,000



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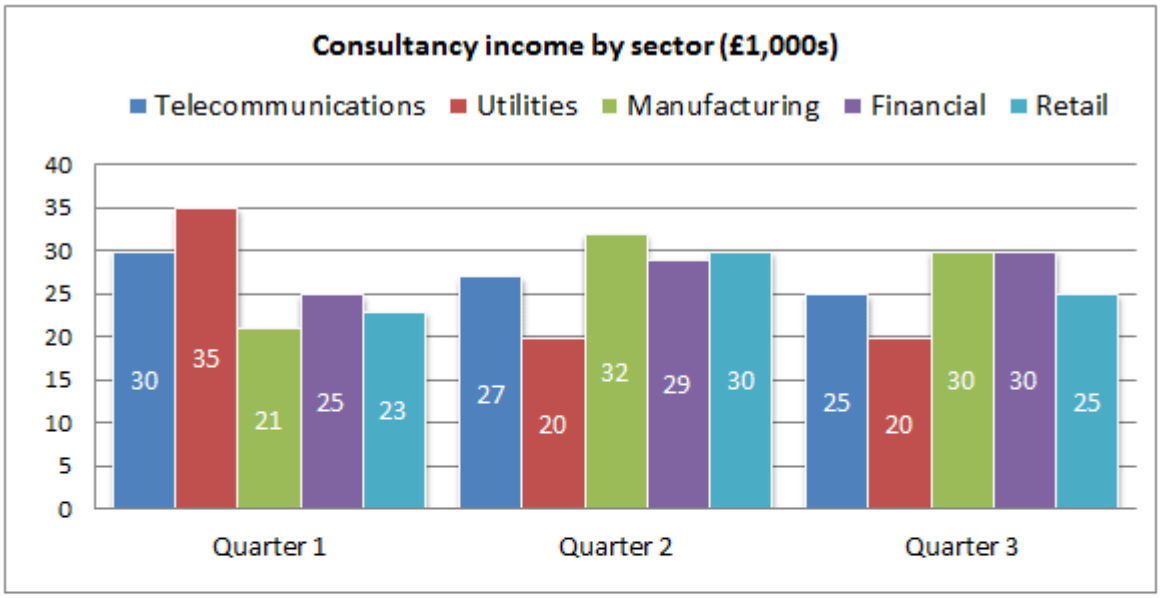
Sarah	6,000	9,000	5,500	3,000
Jane	4,000	4,500	7,500	4,500
Harry	1,000	4,500	5,000	6,500

Q15 The total quarterly income target, starting with £115,000 for Quarter 1, increased by 20% for each subsequent Quarter. In Quarter 3 what was the difference between actual income and the target?

Answer:
(A) £8,000 under-performance
(B) £18,400 under-performance
(C) £31,000 over-performance
(D) £31,000 under-performance
(E) £35,600 under-performance

Step 1: *Calculate the target for Quarter 3, based upon the Quarter 2 target*
Quarter 2 target = £115,000 x 120% = £138,000
Quarter 3 target = £138,000 x 120% = £165,600
The information that you require next is shown in the graph.



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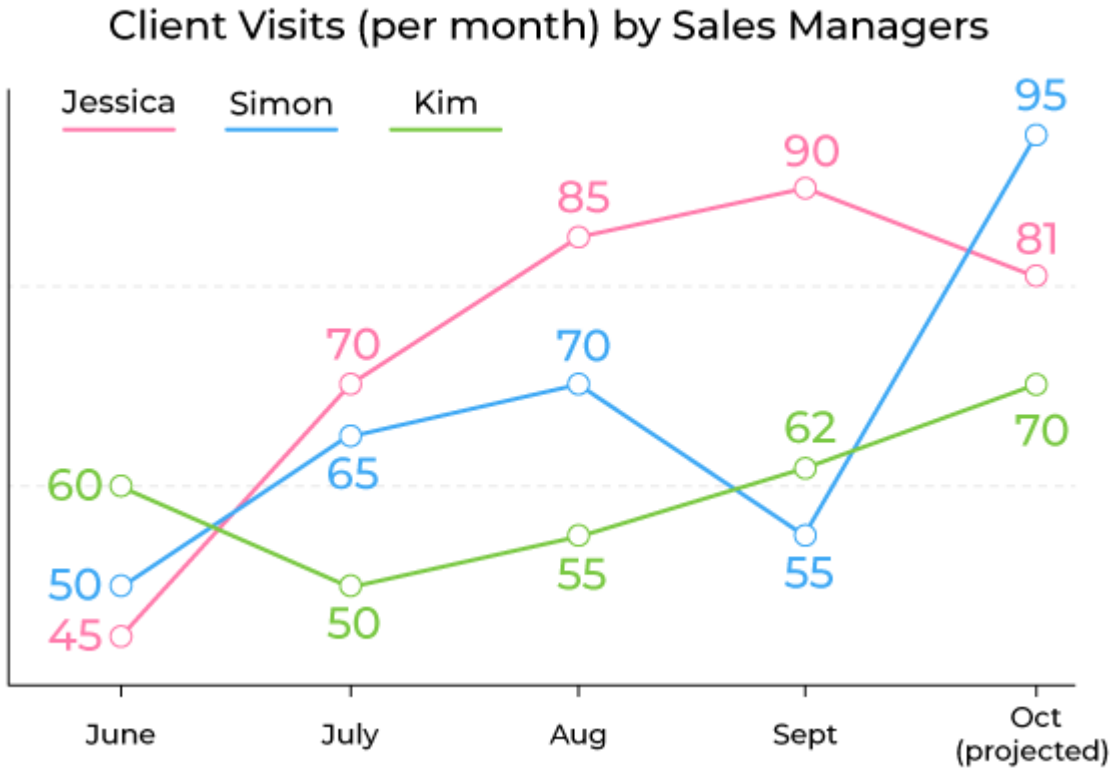
Sarah	6,000	9,000	5,500	3,000
Jane	4,000	4,500	7,500	4,500
Harry	1,000	4,500	5,000	6,500

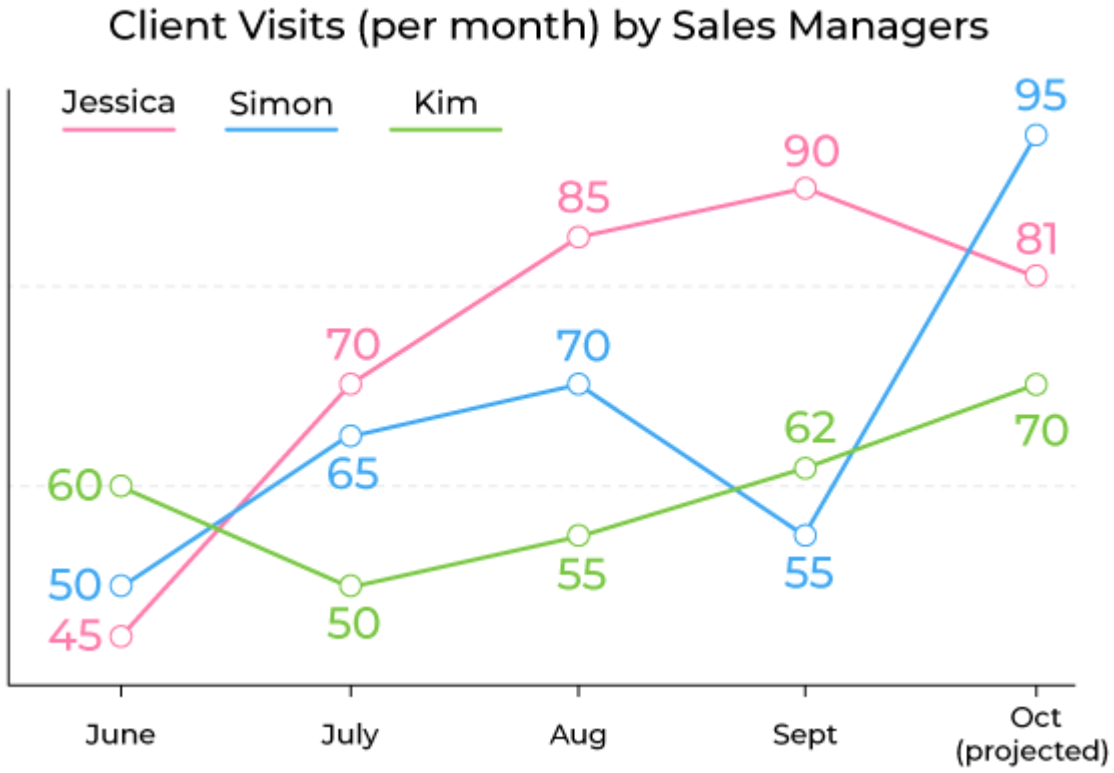
Step 2: *Calculate the difference Quarter 3 income*
Quarter 3 income (000's) = 25 + 20 + 30 + 30 + 25 = 130
Step 3: *Calculate the difference in Quarter 3 between income and target*
130,000 - 165,600 = 35,600 under-performance
Thus, the correct answer is (E) £35,600 underperformance



Q16 Simon and Jessica have travel allowances of 60p and 44p per mile respectively. Simon and Jessica each travel on average 25 miles and 30 miles respectively per sales visit. How much travel allowance is claimed in total by these 2 Sales Managers in August?

Answer:
(A) £1,050
(B) £1,122
(C) £2,122
(D) £2,172
(E) £2,272

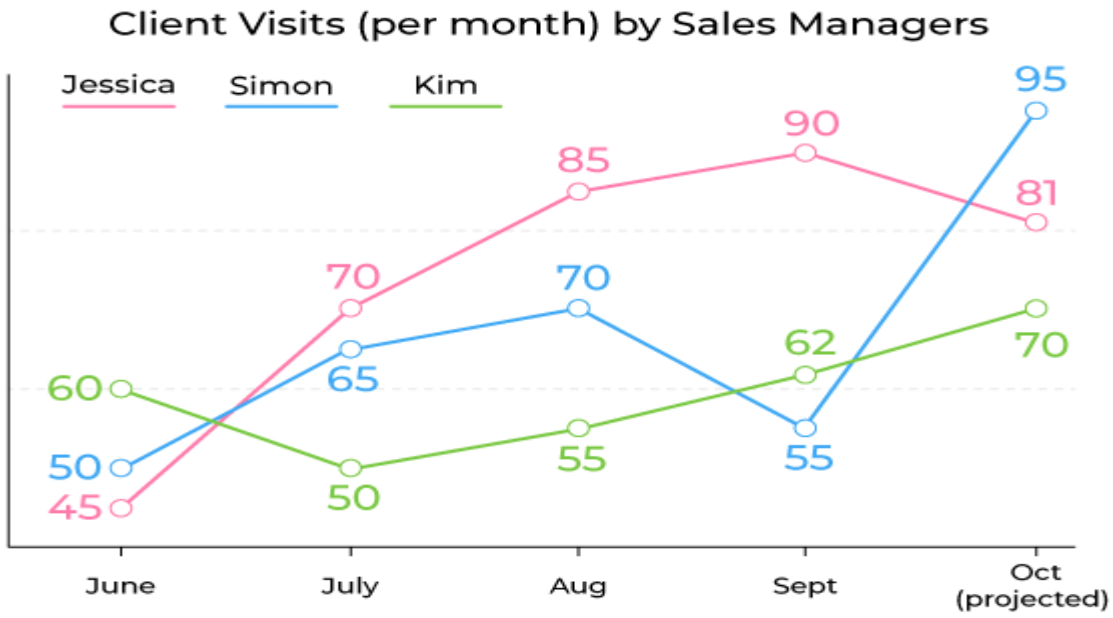
Step 1: *Calculate Simon and Jessica's total mileage in August*
Simon = 60p x 70 x 25 = £1,050
Jessica = 44p x 85 x 30 = £1,122
Step 2: *Calculate Simon and Jessica's combined travel allowance payment*
£1,050 + £1,122 = £2,172
Thus, the correct answer is (D) £2,172



Q17 If the percentage change in sales visits between September and October (projected) continues for November, what will Jessica and Kim's number of complete sales visits be in November?

Answer:
(A) 71 visits (Jessica); 77 visits (Kim)
(B) 71 visits (Jessica); 78 visits (Kim)
(C) 72 visits (Jessica); 78 visits (Kim)
(D) 72 visits (Jessica); 79 visits (Kim)
(E) 73 visits (Jessica); 79 visits (Kim)

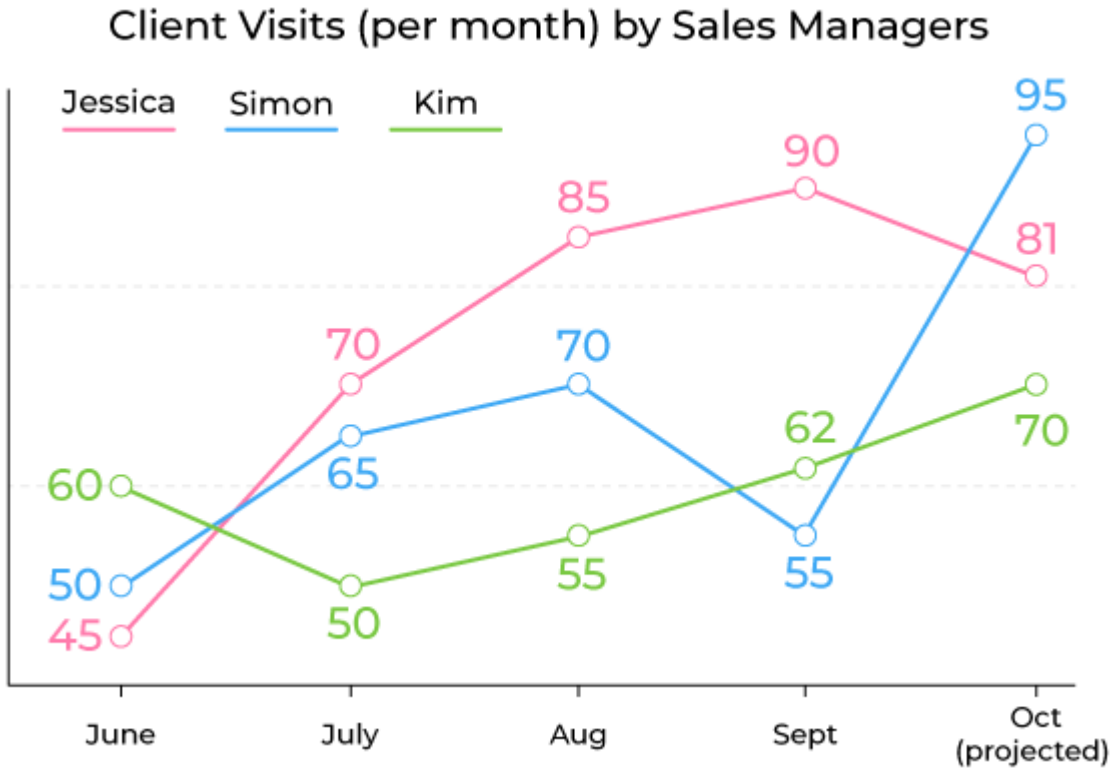
Step 1: *Calculate the % change for Jessica and Kim*
*Jessica = 81/90 * 100% = 90%, which is a 10% decrease*
*Kim = 70/62 * 100% = 112.903%, which is a 12.903% increase*
Step 2: *Calculate each Sales Manager's number of visits for November*
Jessica = 81 x 90% = 72.9 visits
Kim = 70 x 112.903% = 79.03 visits
***Step 3** - This step can catch out people. The question asks for "complete sales visits" and 0.9 is not a complete visit. So, Jessica completed 72 visits. Don't be tempted to round up.*
Thus, the correct answer is (D) 72 visits (Jessica); visits 79 (Kim)



Q18 If the margin of error on October's projected client visits is +/- 15%, what are the ranges for each Sales Manager (rounded to the nearest whole visit)?

Answer:
(A) 90–100 (Simon); 77–85 (Jessica); 66–74 (Kim)
(B) 90– 107 (Simon); 74–87 (Jessica); 64–76 (Kim)
(C) 81–109 (Simon); 73–89 (Jessica); 63–77 (Kim)
(D) 81–109 (Simon); 69–93 (Jessica); 60–81 (Kim)
(E) 76–104 (Simon); 64–89 (Jessica); 56–76 (Kim)

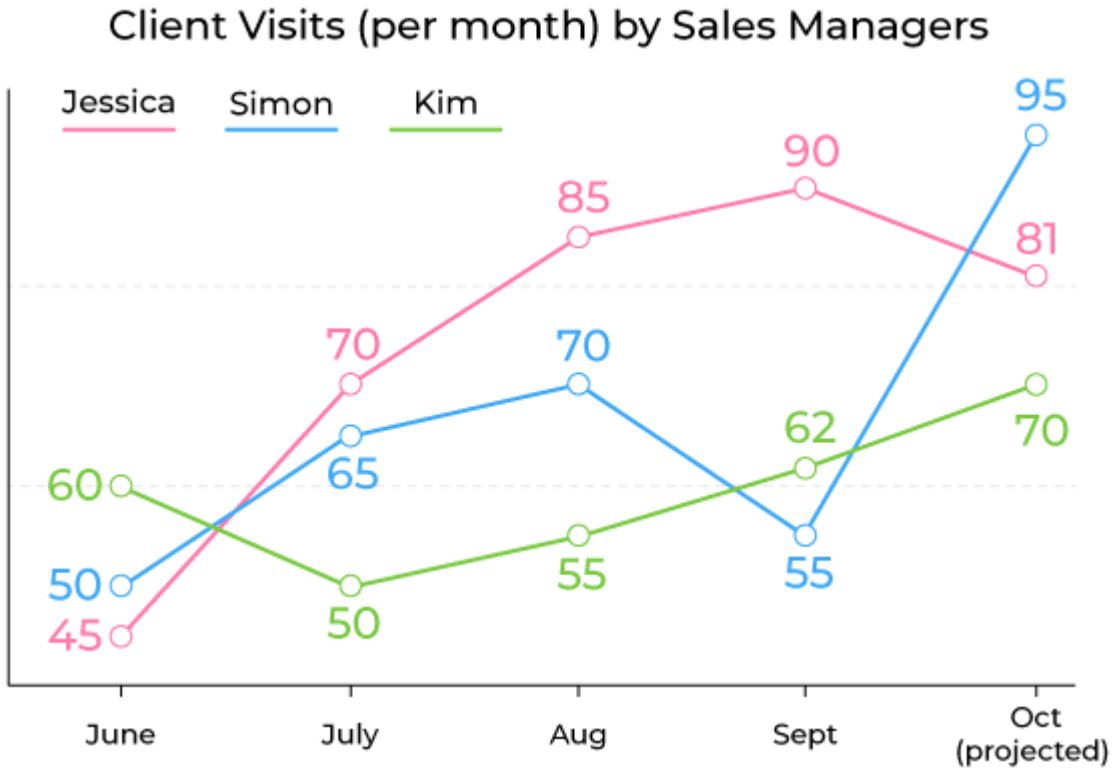
Step 1: *Calculate the 85% and 115% figures for each Sales Manager*
Simon (to the nearest whole visit)
95 x 85% = 80.75 = 81
95 x 115% = 109.25 = 109
Note that already we have eliminated 3 of the possible 5 answers.
Step 2: *Jessica:*
81 x 85% = 68.85 = 69
81 x 115% = 93.15 = 93
Kim:70 x 85% = 59.5 = 60
70 x 115% = 80.5 = 81
Thus, the correct answer is (D) 81–109 (Simon); 69–93 (Jessica); 60–81 (Kim)
Tip: *note the difference between "round to the nearest whole visit" and "give the number of complete visits". This is the difference between rounding to the nearest integer (could be up or down) and ignoring any part-complete events (will always be rounding down).*



Q19 Jessica, who travelled 3,500 miles in July, travelled an extra 10 miles per client visit compared to Simon. What was the total number of miles Simon travelled in July?

Answer:
(A) 2,400
(B) 2,600
(C) 2,800
(D) 3,000
(E) 3,200

Step 1: *Let x = Jessica's average mileage per client visit*
July visits = 70 = 3,500 / x
X = 3,500 / 70 = 50 miles per visit
Step 2: *Calculate Simon's average mileage per client visit*
50 – 10 = 40 miles per visit
Step 3 *– Calculate the total number of miles Simon travelled in July*
40 x 65 = 2,600 miles
Thus, the correct answer is (B) 2,600 miles



Q20 The average order value per client visit is £145, £135 and £125 for Simon, Jessica and Kim respectively. Which Sales Managers generate the highest and lowest order values in June?

Answer:
(A) Kim (most); Jessica (least)
(B) Simon (most); Jessica (least)
(C) Jessica (most); Kim (least)
(D) Jessica (most); Simon (least)
(E) Kim (most); Simon (least)

Step 1: *Calculate each Sales Manager's client sales for June, as follows:*

Simon	*50 visits in June*	*50 x £145 = £7,250*
Jessica	*45 visits in June*	*45 x £135 = £6,075*
Kim	*60 visits in June*	*60 x £125 = £7,500*

Thus, the correct answer is (A) Kim (most); Jessica (least)

US OPERATIONS YEAR 1	Subsidiary 1	Subsidiary 2	Subsidiary 3	Subsidiary 4	Subsidiary 5
Sales	1,124	3,334	2,250	24,300	14,450
Salary payroll for all staff *	127	409	289	570	4,355
Number of staff	555	1,722	1,343	2,824	13,292
Dividends per share (cents):					
1. Interim dividend paid	6.2	8.5	9	15	11
2. Final proposed dividend	15.8	10.5	46	10	25
Number of shares (millions)	3	3.5	12	2.6	20

* in $100,000s

Q21 Which subsidiary will pay the lowest amount in dividends (interim and final dividends combined)?

Answer:
(A) Subsidiary 1
(B) Subsidiary 2
(C) Subsidiary 3
(D) Subsidiary 4
(E) Subsidiary 5

Step 1: *Calculate the total dividends payable per share for each subsidiary*
Subsidiary 1 = 6.2 + 15.8 = 22
Subsidiary 2 = 8.5 + 10.5 = 19
Subsidiary 3 = 9 + 46 = 55
Subsidiary 4 = 15 + 10 = 25
Subsidiary 5 = 11 + 25 = 36
Step 2: *Calculate the total payable for each subsidiary*
Subsidiary 1 = 22 cents x 3 million shares = $660,000
Subsidiary 2 = 19 cents x 3.5 million shares = $665,000
Subsidiary 3 = 55 cents x 12 million shares = $6,600,000
Subsidiary 4 = 25 cents x 2.6 million shares = $650,000
Subsidiary 5 = 36 cents x 20 million shares = $7,200,000
Thus, the correct answer is (D) Subsidiary 4

US OPERATIONS YEAR 1	Subsidiary 1	Subsidiary 2	Subsidiary 3	Subsidiary 4	Subsidiary 5
Sales	1,124	3,334	2,250	24,300	14,450
Salary payroll for all staff *	127	409	289	570	4,355
Number of staff	555	1,722	1,343	2,824	13,292
Dividends per share (cents):					
1. Interim dividend paid	6.2	8.5	9	15	11
2. Final proposed dividend	15.8	10.5	46	10	25
Number of shares (millions)	3	3.5	12	2.6	20

* in $100,000s

Q22 Which 2 or 3 subsidiaries had combined sales of 18,908?

Answer:
(A) Subsidiaries 1 and 5
(B) Subsidiaries 2 and 5
(C) Subsidiaries 1, 2 and 5
(D) Subsidiaries 3 and 5
(E) Subsidiaries 1, 3 and 5

Step 1: *This question is best answered by a process of elimination:*

- *Review the last number in each Sales figure. The Sales figures for Subsidiary 1 and Subsidiary 2 end in "4" and the others end in zero.*
- *Since the total ends in "8" both Subsidiary a and Subsidiary b must be included in the answer (i.e. "4" + "4" = "8").*
- *At this stage you can see that only one of the possible answers includes Subsidiary 1 and Subsidiary 2. If you wanted to complete the sum to double-check, do so.*
- *Subsidiary 1 + 2 + 5 = 1,124 + 3,334 + 14,450 = 18,908.*

Thus, the correct answer is (C) Subsidiaries 1, 2 and 5

US OPERATIONS YEAR 1	Subsidiary 1	Subsidiary 2	Subsidiary 3	Subsidiary 4	Subsidiary 5
Sales	1,124	3,334	2,250	24,300	14,450
Salary payroll for all staff *	127	409	289	570	4,355
Number of staff	555	1,722	1,343	2,824	13,292
Dividends per share (cents):					
1. Interim dividend paid	6.2	8.5	9	15	11
2. Final proposed dividend	15.8	10.5	46	10	25
Number of shares (millions)	3	3.5	12	2.6	20

* in $100,000s

Q23 Over the next year, Subsidiary 5's Sales are expected to drop by a fifth whilst its number of staff is expected to increase by 15%. What will be the percentage change in the Sales per member of staff from Year 1 to the next?

Answer:
(A) 25%
(B) 26%
(C) 29%
(D) 30%
(E) 44%

Step 1: *Calculate next year's changes in the Subsidiary 5 data*
Sales 14,450 x 4/5 = 11,560
Number of staff = 13,292 x 115% = 15,285.8
Step 2: *Calculate next year's Sales per member of staff*
11,560 / 15,285.66 = 0.756 (in $100,000's)
Step 3: *Calculate this year's Sales per member of staff*
14,450 / 13,292 = 1.087 (in $100,000's)
Step 4: *Calculate the % change in the Sales per member of staff*
0.756 / 1.087 = 0.6955, which is a 30.4% drop.
Tip: *note we must divide 0.756 by 1.087, not the other way round, because the question asks us to go* ***from*** *Year 1* ***to*** *next year. The calculation depends on what we take as the reference point. In full, the calculation is (1.087 – 0.756) / 1.087 = 30.4%. Thus, the correct answer is (D) 30%*

US OPERATIONS YEAR 1	Subsidiary 1	Subsidiary 2	Subsidiary 3	Subsidiary 4	Subsidiary 5
Sales	1,124	3,334	2,250	24,300	14,450
Salary payroll for all staff *	127	409	289	570	4,355
Number of staff	555	1,722	1,343	2,824	13,292
Dividends per share (cents):					
1. Interim dividend paid	6.2	8.5	9	15	11
2. Final proposed dividend	15.8	10.5	46	10	25
Number of shares (millions)	3	3.5	12	2.6	20

* in $100,000s

Q24 What is the ratio of Subsidiary 4's interim dividend per share compared to Subsidiary 5's final dividend per share?

Answer:
(A) 2:3
(B) 5:2
(C) 2:5
(D) 3:5
(E) 5:3
This is a fairly straight-forward one.

Step 1: *Put the figures from the table into a ratio*
15:25
Step 2: *Simplify the ratio 3:5*
Thus, the correct answer is (D) 3:5

US OPERATIONS YEAR 1	Subsidiary 1	Subsidiary 2	Subsidiary 3	Subsidiary 4	Subsidiary 5
Sales	1,124	3,334	2,250	24,300	14,450
Salary payroll for all staff *	127	409	289	570	4,355
Number of staff	555	1,722	1,343	2,824	13,292
Dividends per share (cents):					
1. Interim dividend paid	6.2	8.5	9	15	11
2. Final proposed dividend	15.8	10.5	46	10	25
Number of shares (millions)	3	3.5	12	2.6	20

* in $100,000s

Q25 What is the lowest average payroll per member of staff (across the 5 subsidiaries)?

Answer:
(A) $23,751
(B) $22,883
(C) $21,519
(D) $20,764
(E) $20,184

Step 1: *Calculate the average payroll for each subsidiary*
Subsidiary 1 = $12,700,000 / 555 = $22,883
Subsidiary 2 = $40,900,000 / 1,722 = $23,751
Subsidiary 3 = $28,900,000 / 1,343 = $21,519
Subsidiary 4 = $57,000,000 / 2,824 = $20,184
Subsidiary 5 = $435,500,000 / 13,292 = $32,764

Thus, the lowest and the correct answer is (E) $20,184

Consolidated Income Statements (£millions)	Competitor A	Competitor B	Competitor C
Revenue	580	632	600
Gross profit	128	148	147
Operational profit	108	128	131
Profit before tax	90	112	117
Corporation tax*	-27	-33.6	-35.1
Profit after tax	63	78.4	81.9

*Tax = 30%

Q26 If Profit before tax increases by 15% for Competitor B and decreases by 8% for Competitor A, what is the difference between Competitor A and Competitor B's corporation tax payments (to the nearest £million)?

Answer:
(A) £10 million
(B) £12 million
(C) £14 million
(D) £16 million
(E) £18 million

Tip: *Don't be caught out by the fact that the question lists Competitor B first, when you might be expecting to see Competitor A then Competitor B. This is intended to throw those not paying attention.*

Step 1: *Add 15% to Competitor B's profit before tax*
112 x 115% = 128.8
Step 2: *Decrease Competitor A's profit before tax by 8%*
90 x 92% = 82.8
Step 3 *- Calculate the difference in corporation tax (at 30%)*
(128.8 – 82.8) x 30% = 13.8 = £14 million (to the nearest £million)
Thus, the correct answer is (C) £14 million

Consolidated Income Statements (£millions)	Competitor A	Competitor B	Competitor C
Revenue	580	632	600
Gross profit	128	148	147
Operational profit	108	128	131
Profit before tax	90	112	117
Corporation tax*	-27	-33.6	-35.1
Profit after tax	63	78.4	81.9

*Tax = 30%

Q27 Competitor B and Competitor C choose to declare their Revenues in $ and Euros respectively. What are these figures? (Use the exchange rates 1£ = $1.66; 1£ = €1.15).

Answer:
(A) $1,043 million (Competitor B); €708 million (Competitor C)
(B) $1,049 million (Competitor B); €690 million (Competitor C)
(C) $1,049 million (Competitor B); €720 million (Competitor C)
(D) $720 million (Competitor B); €1,055 million (Competitor C)
(E) Can't tell from the data provided

Step 1: *Calculate Competitor B revenue in $*
632 x 1.66 = $1,049
Step 2: *Calculate Competitor C revenues in Euros*
600 x 1.15 x = €690
Thus, the correct answer is (B) $1,049 million (Competitor B); €690 million (Competitor C)

Consolidated Income Statements (£millions)	Competitor A	Competitor B	Competitor C
Revenue	580	632	600
Gross profit	128	148	147
Operational profit	108	128	131
Profit before tax	90	112	117
Corporation tax*	-27	-33.6	-35.1
Profit after tax	63	78.4	81.9

*Tax = 30%

Q28 What would be the difference in Euros if Competitor A used an exchange rate of 1£ = €1.20, rather than 1£ = €1.15, when calculating its Profit after tax?

Answer:
(A) €0.05 million
(B) €1.15 million
(C) €2.05 million
(D) €3.05 million
(E) €3.15 million

Step 1: *Calculate the difference in the exchange rate*
1.20 - 1.15 = €0.05
Step 2: *Calculate the difference in Euros*
€0.05 x 63 = €3.15 million
Thus, the correct answer is (E) €3.15 million

Consolidated Income Statements (£millions)	Competitor A	Competitor B	Competitor C
Revenue	580	632	600
Gross profit	128	148	147
Operational profit	108	128	131
Profit before tax	90	112	117
Corporation tax*	-27	-33.6	-35.1
Profit after tax	63	78.4	81.9

*Tax = 30%

Q29 What was the average Gross profit across the 3 competitors (to the nearest £10million)?

Answer:
(A) £140 million
(B) £141 million
(C) £142 million
(D) £143 million
(E) £144 million

Step 1: *Calculate the total Gross Profit 128 + 148 + 147 = 423*
Step 2: *Calculate the average 423 / 3 = 141*
Step 3 *– To the nearest £10million = £140 million*

Thus, the correct answer is (A) £140 million

Consolidated Income Statements (£millions)	Competitor A	Competitor B	Competitor C
Revenue	580	632	600
Gross profit	128	148	147
Operational profit	108	128	131
Profit before tax	90	112	117
Corporation tax*	-27	-33.6	-35.1
Profit after tax	63	78.4	81.9

*Tax = 30%

Q30 Competitor C moves to a country charging 15% corporation tax and corporation tax falls to 22% for Competitors A and B. What is the total corporation tax payable for the 3 competitors (based upon the Profit before tax figures shown)?

Answer:
(A) £62 million
(B) £46 million
(C) £26 million
(D) £25 million
(E) Can't tell from data

Step 1: *Calculate the corporation tax payable for each competitor*
Competitor A = 90 x 22% = 19.8
Competitor B = 112 x 22% = 24.6
Competitor C = 117 x 15% = 17.6
Step 2: *Calculate the total corporation tax payable*
19.8 + 24.6 + 17.6 = £62 million
Thus, the correct answer is (A) £62 million

End of test