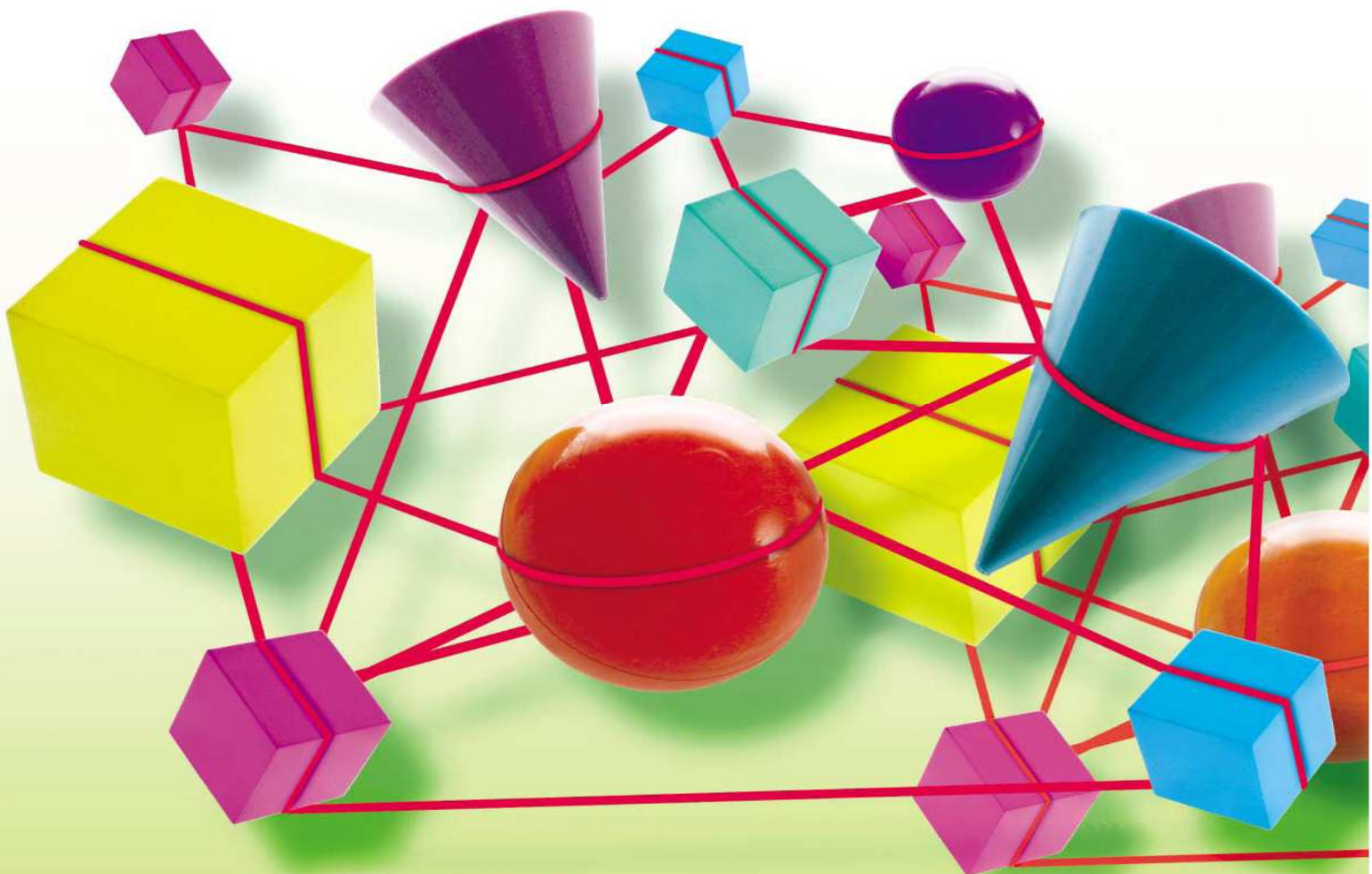Karolina Rucińska

NUMERICAL
TESTS

- PRACTICAL EXAMPLES

Title: Numerical Tests – Practical Examples

Author: Karolina Rucińska

TEST 1

1.

Bike sales in Powerbike
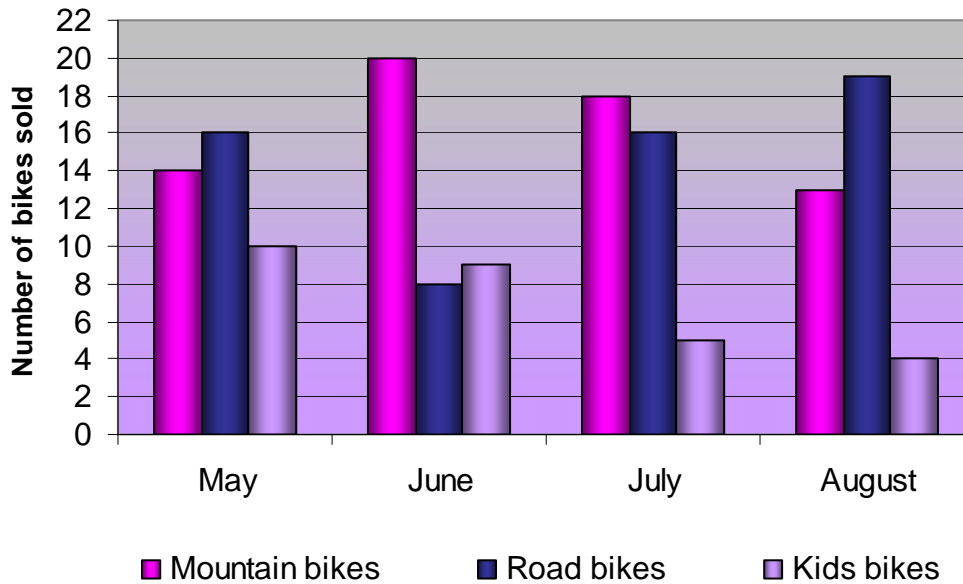
Taking into account the different types of bikes offered by Powerbike, which month showed the highest increase in sales in comparison with the previous month?

A. May   B. June   C. July   D. August   E. Cannot say

2.

Salaries in three selected mid-size companies

Company A	Salary (EUR)	900	1200	1400	2000
	Number of employees	16	25	10	5
Company B	Salary (EUR)	1100	1300	1700	2200
	Number of employees	8	22	14	10
Company C	Salary (EUR)	1300	1500	1700	1900
	Number of employees	4	8	12	6

What is the average salary in the company B?

A. €1220.43   B. €1540.74   C. €1633.33   D. €1789.20   E. €1950.50

3.

Gender division for 3 companies
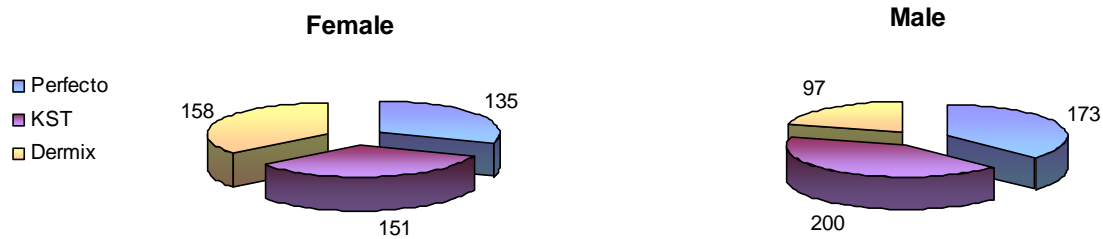
Female

- Perfecto
- KST
- Dermix

135
158
151

Male

97
173
200

In KST, the ratio of employees with some higher education to those with PHDs and those with only secondary education equals 5:2:6. How many employees with PHDs are there in KST?

A. 13   B. 27   C. 39   D. 54   E. 97

4.

Data of online travel agency Sunny Tours (for 2007)

Destination	Egypt	Tunisia	Morocco	Arabic Emirates	RSA
Number of customers	1543	795	2150	528	311
Number of offers sent	5000	2000	5000	1500	700
% of women among the customers	65%	68%	47%	38%	77%
% of customers who bought last minute	18%	28%	15%	10%	8%

How many male customers took advantage of the last minute offer to Morocco?

A. 89   B. 110   C. 156   D. 187   E. Cannot say

5.

The volume of portfolio investments and FDI
## for a corporation in division by regions
(billion EUR)

	2005		2008	
	Portfolio Investments	**FDI**	**Portfolio Investments**	**FDI**
North America	60	240	75	320
Europe	45	125	35	90
South America	50	110	65	120
Central America	15	35	15	55
Africa	45	70	35	55
Asia	55	170	85	220

What part of the total expenditure on direct foreign investment in the Americas in 2005 accounted for South America?

A. 29%   B. 32%   C. 35%   D. 41%   E. Cannot say
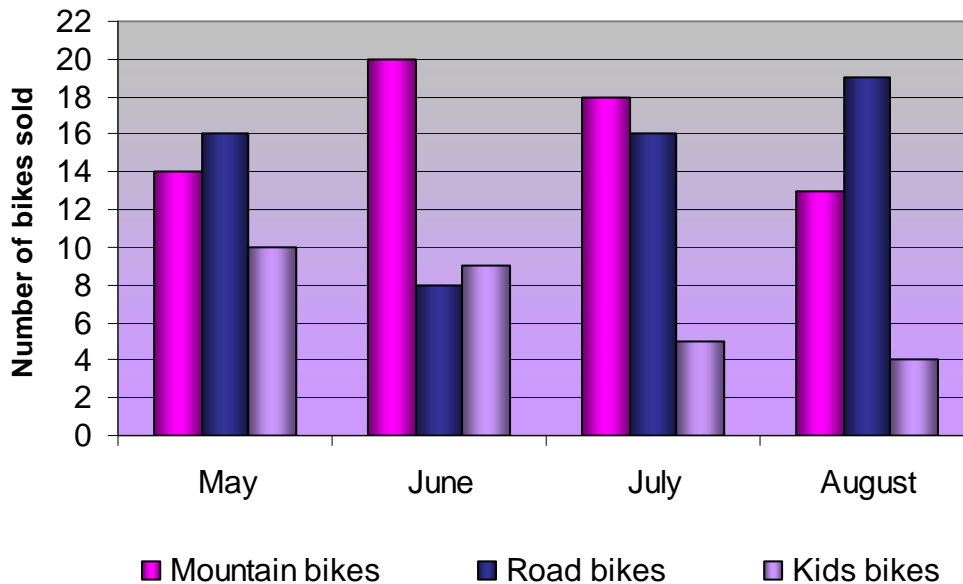
6.

Cost distribution in the company Hornstadt
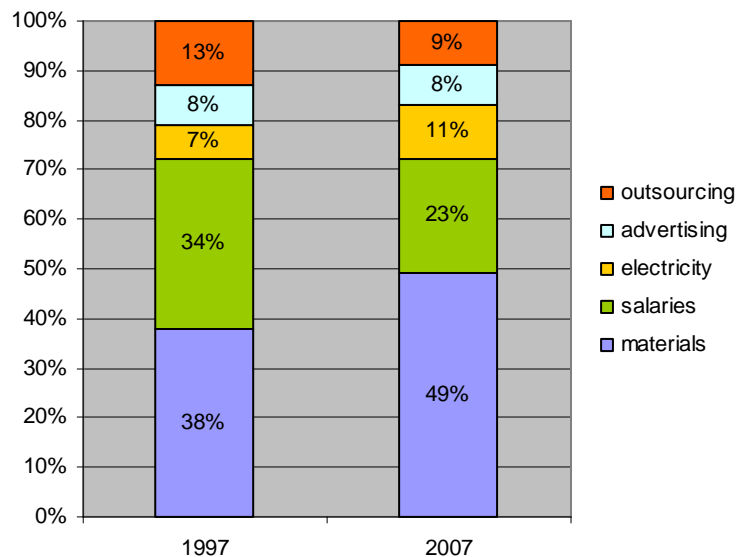
Assuming that in 1997 a total of €54,357 was spent, and the electricity expenditure was a third of what it was ten years later, how much approximately was the total expenditure in 2007?

A. €77,890   B. €103,770   C. €120,500

D. €155,650   E. None of these answers

SOLUTION EXPLANATIONS

Bike sales in Powerbike

1. Taking into account the different types of bikes offered by Powerbike, which month showed the highest increase in sales in comparison with the previous month?

A. May   B. June   C. July   D. August   E. Cannot say

A rise was seen only in July (39-37 = 2). We cannot state what the rise in May was as we don't dispose of the data from March.

Salaries in three selected mid-size companies

|					
Company A	Salary (EUR)	900	1200	1400	2000
	Number of employees	16	25	10	5
Company B	Salary (EUR)	1100	1300	1700	2200
	Number of employees	8	22	14	10
Company C	Salary (EUR)	1300	1500	1700	1900
	Number of employees	4	8	12	6

2. What is the average salary in the company B?

A. €1220.43   B. €1540.74   C. €1633.33   D. €1789.20   E. €1950.50

In order to calculate the average in this case, multiply the wage by the number of people who get it and then divide by the total of employees:

(1100*8 + 1300*22 + 1700*14 + 2200*100)/54 = 1540.74

Gender division for 3 companies
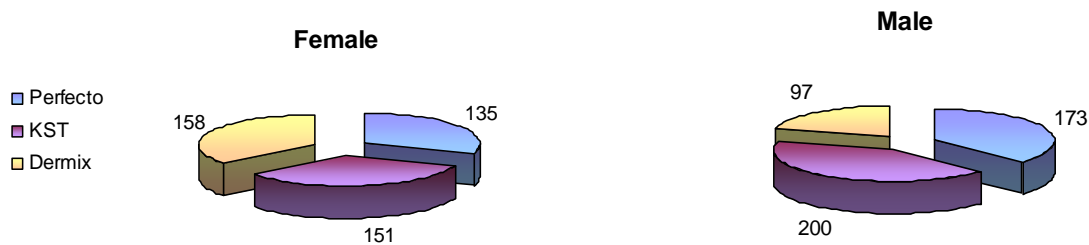
3. In KST, the ratio of employees with some higher education to those with PHDs and those with only secondary education equals 5:2:6. How many employees with PHDs are there in KST?

A. 13   B. 27   C. 39   D. 54   E. 97

Number of KST workers: 351
We divide it by the sum of parts 5+2+6 = 13 and multiply by the part of people with a doctorate

$$\frac{351}{13} = 27 \quad * \ 2 = 54$$

Data of online travel agency Sunny Tours (for 2007)

Destination	Egypt	Tunisia	Morocco	Arabic Emirates	South Africa
Number of customers	1543	795	2150	528	311
Number of offers sent	5000	2000	5000	1500	700
% of women among the customers	65%	68%	47%	38%	77%
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4. How many male customers took advantage of the last minute offer to Morocco?

A. 89   B. 110   C. 156   D. 187   E. Cannot say

> *Don't be tempted to take 15% of men, because the only data given is that the 15% of the overall number of customers took last minute with no data about the gender division.*

The volume of portfolio investments and FDI
for a corporation in division by regions
(billion EUR)

	2005		2008	
	Portfolio Investments	**FDI**	**Portfolio Investments**	**FDI**
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5. What part of the total expenditure on direct foreign investment in the Americas in 2005 accounted for South America?

A. 29%   B. 32%   C. 35%   D. 41%   E.   Cannot say

Whole FDI on the American continent: 240+110+35 = €385 trillion
South America's share: (110*100%)/385 = 28.6%

Cost distribution in company Hornstadt
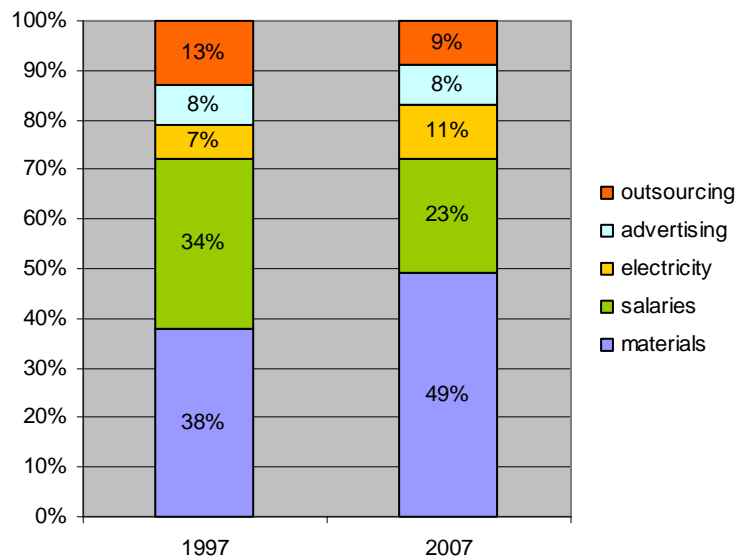
6. Assuming that in 1997 a total of 54 357 € was spent, and the electricity expenditure was a third of what it was ten years later, how much approximately was the total expenditure in 2007?

A. 77 890 €   B. 103 770 €   C. 120 500 €

D. 155 650 €   E. None of these answers

Electricity expenses in 1997: 7%*54 357 = 3,804.99 €
Electricity expenses in 2007: 3,804.99*3 = 11,414.97 €
Expenses total in 2007: (11 415*100%)/11% = 103,772.45 €

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