

BUSINESS *Select*

Sample Questions

Problem Solving

analysis of information and application to problems

UNIT 1

Questions 1 and 2

A study in 1989 looked at the relationship between the consumption of dairy products and *coronary heart disease* (CHD) in 21 countries. The average intake of dairy products per head of population was compared with the male mortality rate (from coronary heart disease number of men per 100 000 of population who died in 1989). The results of this study are shown in Figure 1.

- A line of best fit is drawn on the figure.

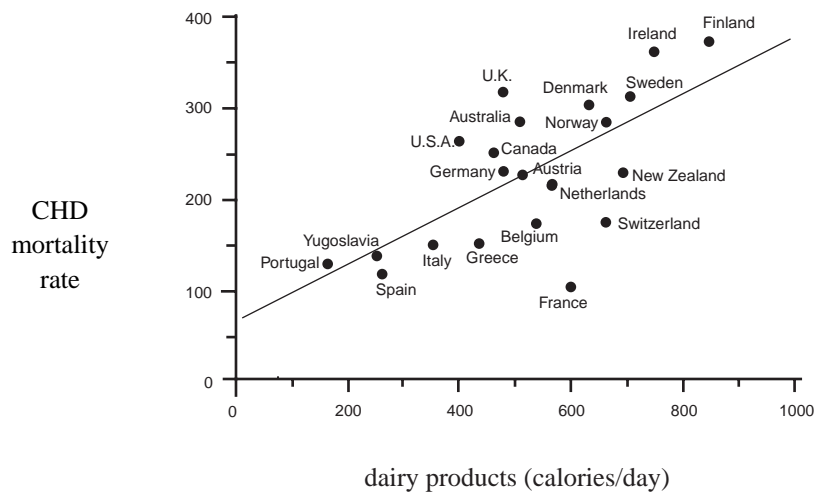


Figure 1

- 1 Which one of the following statements is supported by the data shown in Figure 1?
 - A The country that has the highest consumption of dairy products has the highest mortality rate from CHD.
 - B The country that has the highest consumption of dairy products has the lowest mortality rate from CHD.
 - C The country that has the lowest consumption of dairy products has the highest mortality rate from CHD.
 - D The country that has the lowest consumption of dairy products has the lowest mortality rate from CHD.
 - E None of the above.
- 2 In which one of the following countries is the mortality rate from CHD most significantly lower than that expected from their level of dairy food consumption?
 - A Switzerland
 - B Finland
 - C France
 - D Spain
 - E UK

UNIT 2

Questions 3 and 4

Dorothy is organising staffing for an advice service for Mondays to Fridays. The service will not operate Saturday and Sunday. Staff will work in five-hour shifts. The EARLY shift is from 7.00 am to noon, the MIDDLE shift is from noon to 5.00 pm, and the LATE shift is from 5.00 pm to 10.00 pm.

No person will work more than two shifts on any one day.

Dorothy has six volunteers, who offer to make themselves available as follows:

Pia	– one day a week, either a Thursday or Friday.
Quan	– up to two days per week, but the two days must be consecutive.
Ricki	– only EARLY shifts, and a maximum of three per week
Sandra	– can do any shift, except the MIDDLE shifts on Tuesday and Thursday, and the EARLY and MIDDLE shifts on Monday and Wednesday.
Terri	– one day a week on the same day as Ugo (so they can go shopping together), but not on the same shift. Terri will work on either the EARLY shift or the LATE shift (i.e. if Ugo works the EARLY shift, Terri will work the LATE shift, and <i>vice versa</i>).
Ugo	– one day a week on the same day as Terri (so they can go shopping together), but not on the same shift. Ugo will work on either the EARLY shift or the LATE shift (i.e. if Terri works the EARLY shift, Ugo will work the LATE shift, and <i>vice versa</i>).

If there is a shift that cannot be covered by these people, Dorothy will do it.

3 Dorothy produces this shift roster for one week.

	Mon	Tue	Wed	Thu	Fri
Early	Ricki	Ricki	Ricki	Sandra	Terri
Middle	Quan	Quan	Quan	Pia	Pia
Late	Sandra	Quan	Sandra	Pia	Ugo

This roster is

- | | |
|--|---|
| <p>A satisfactory.</p> <p>B not satisfactory for Pia only.</p> <p>C not satisfactory for Quan only.</p> | <p>D not satisfactory for Ricki only.</p> <p>E not satisfactory for Pia and Quan.</p> |
|--|---|

4 Given that no one can work more than two shifts a day, what is the greatest number of shifts that Sandra can work in a week?

- | | |
|--|--|
| <p>A five</p> <p>B six</p> <p>C seven</p> | <p>D eight</p> <p>E nine</p> |
|--|--|

UNIT 3

Questions 5 – 9

Dale, a plumber, charges for work done in people's homes as follows:

\$60.00 to go to the home, which includes a maximum of 15 minutes work; plus \$15.00 for any part of each 15 minutes' work after the first 15 minutes.

- 5 Dale calls at Mrs Acorn's home and does an hour and twenty minutes' work.

His charge will be

- | | |
|-------------|-------------|
| A \$75.00. | D \$135.00. |
| B \$90.00. | E \$150.00. |
| C \$120.00. | |

- 6 Dale calls at Paul's place. Paul wants work done, but only has \$160 to pay for it.

Dale starts work at 2:00 p.m. and works continuously for the maximum time that could be covered by the \$160.

When does Dale stop?

- | | |
|-------------|-------------|
| A 3:45 p.m. | D 4:00 p.m. |
| B 3:50 p.m. | E 4:05 p.m. |
| C 3:55 p.m. | |

Questions 7 – 9 relate to the following additional information.

Dale wants to set up a computer program to automate his billing of customers. The illustration opposite (Figure 1) shows the stage he has reached in his planning of the flow chart for the program. There is nothing in the circle marked with an X at this stage.

- 7 Without an instruction at X, a problem with this program is that it will

- A always charge customers too little.
- B always charge customers too little, except for periods of 15 minutes or less.
- C always charge customers too much, except for periods of 15 minutes or less.
- D only charge customers correctly for periods of time that are exact multiples of 15 minutes.
- E only charge customers correctly for periods of time that are not exact multiples of 15 minutes.

- 8 Which one of the following instructions at position X would correct Dale's program?

- | | |
|--------------------|--------------------|
| A subtract \$15.00 | D add \$60.00 |
| B add \$45.00 | E subtract \$60.00 |
| C subtract \$45.00 | |

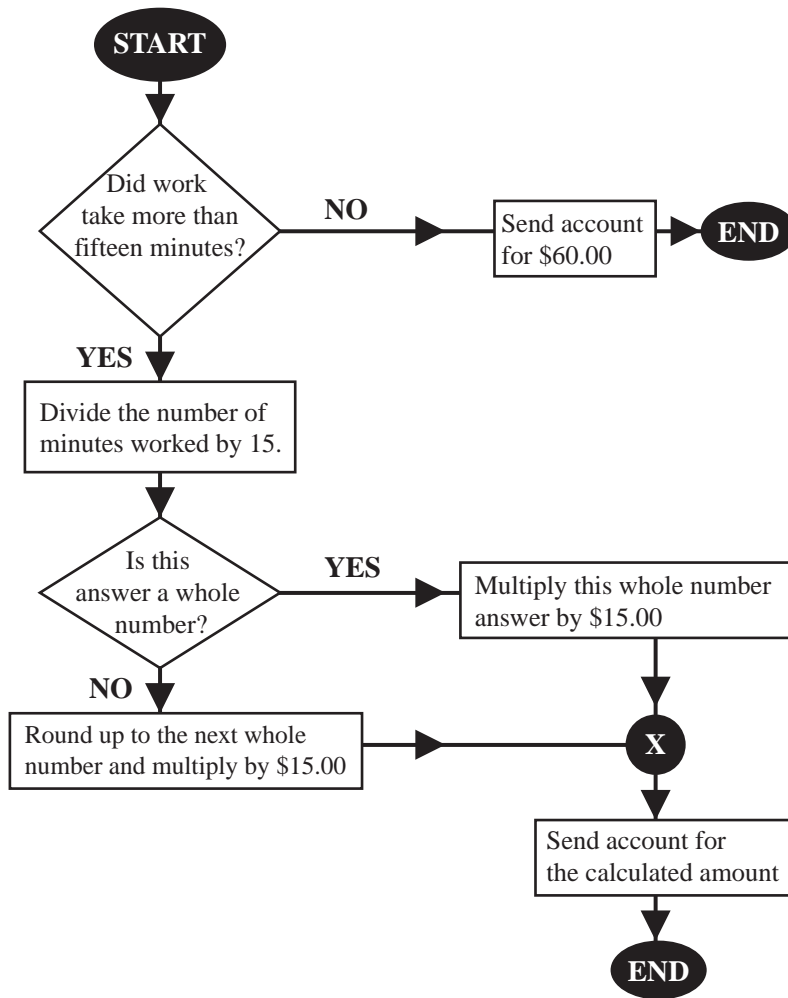


Figure 1

- 9 Rather than modify the program by adding an instruction at 'X', Dale considers correcting it by

changing the instruction

Multiply this whole number answer by \$15.00

to read

Multiply this whole number answer by \$15.00 and add \$60.00

Under what circumstances will this modified program bill customers the correct amount?

- A always
- B only when the answer to the question in the second diamond is YES (a whole number)
- C only when the answer to the question in the second diamond is NO (not a whole number)
- D only when the time is less than fifteen minutes
- E in none of the above circumstances

Answers

1	A
2	C
3	E
4	D
5	D
6	A
7	B
8	B
9	D

Acknowledgments

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