|  |  |  |  |
| --- | --- | --- | --- |
| Description: pact jpg1 | **Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Mathematics Essential**  **Test 7, 2015**  **Topics – Data and Time** | | 65  = % |
| **Total Time:** | ***60*** *minutes* |  | |
| **Total Reading:** | *5**minutes* |
| **Total Working:** | *55**minutes* |
| **Weighting:** | *5% of the year.* |
| **Equipment Allowed:** | *Calculator, 1 page of A4 notes.* |
| ***You must include all working out to receive full marks*** | | | |
| **CALCULATOR ASSUMED** | | | |

1. **4 marks (1/2 each)**

Classify each type of data as categorical(C) or numerical (N).

A people’s hair colours

B customer ratings of a restaurant’s level of service (from poor to excellent)

C homes with internet access

D times taken for athletes to run 100 metres

E countries where cars are manufactured

F school populations

G heights of bridges

H classification rating of film

**2. (2 Marks: 1, 1)**

Covert the following times into **hours** and **minutes**:

1. 150 minute
2. 6000 seconds

**3. (3 Marks: 1, 1, 1)**

How much time has elapsed between:

* 1. 8:20am to 2:58pm? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. 14th September to 5th November? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. 16th December to 2nd February? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. ( 7 Marks)**

Complete the following table:

|  |  |
| --- | --- |
| **am or pm time** | **24-hour time** |
| 2:58pm |  |
| 8:20pm |  |
|  | 0345 |
| 5:55am |  |
| 11.30pm |  |
|  | 1359 |
|  | 0001 |

1. **(2 Marks)**

What time does John have to leave for his 9:15am job interview if it takes 38 minutes to drive there?

1. **(2 Marks)**

John now needs to catch a flight that leaves at **7:25 pm**. He needs to be there **1 and a half** **hours** before take off and it will take **1 hour and 5 mins** to get to the airport. **What is the latest time at which he can leave home?**

1. **(2 Marks: 1, 1)**

What time is it **45 mins** before:

* 1. 12:17am? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. 11:28pm? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **(11 Marks: 6, 1, 1, 1, 2)**

John collected information about the number of days in a row the temperature in his area went over 36ºC after one day of 36ºC. This is his set of results.

4 2 1 3 0 1 3 3 2 4 2 1 3 3 0

3 5 3 1 2 4 3 2 3 5 0 2 1 1 3

6 2 0 1 3 1 3 0 0 2 1 5 3 0 2

**a** Summarize John’s data in this frequency table.

|  |  |  |
| --- | --- | --- |
| **Score (x)**  **No days in a row above 36ºC** | **Tally** | **Frequency**  **(*f* )** |
| 0 |  |  |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| **Total** |  |  |

**b** Determine the modal number of days for which people had this extreme temperature.

**c** Calculate the range.

**d** What fraction of the people in John’s data had extreme temperatures for 1 or 2 days following the first 36ºC?

**e** What percentage of people had extreme temperatures for more than 4 days after the first day of 36ºC?

1. **(5 Marks: 1, 2, 2)**

This table shows how students in upper school travelled to school yesterday.

|  |  |
| --- | --- |
| **Means of travel to school** | **Number of students** |
| Train | 8 |
| Walk | 20 |
| Car | 7 |
| Moped | 3 |
| Bike | 6 |
| Bus | 16 |

**a** What fraction of the students walked?

**b** What percentage of the students travelled by moped?

**c** Calculate the percentage of the students who didn’t travel by train.

1. **(5 Marks: 1, 2, 2**

Karen works in a hamburger shop. She records the number of sales she makes every hour. The data shows her sales for an 8-hour shift last Friday:

12 23 16 17 19 16 22 20

**a** Put the data in order.

**b** What was the largest number of sales Karen makes in an hour?

**c** What is the median of the data?

**d** Calculate the mean number of sales Karen made per hour.

1. **(Marks 7)**

This table shows how some students in year 8 travelled to school yesterday. Display the information in a dot-plot.

|  |  |
| --- | --- |
| **Means of travel to school** | **Number of students** |
| Train | 4 |
| Walk | 3 |
| Car | 6 |
| Bike | 8 |
| Bus | 5 |

1. 

**12. (11 Marks: 7, 2, 2)**

Sarah is writing an article about the goals scored in football in the past 5 years. She plans to include a column graph showing the number of goals scored against the year.

|  |  |
| --- | --- |
| Year | Goals scored |
| 2003 | 825 |
| 2004 | 950 |
| 2005 | 1100 |
| 2006 | 1250 |
| 2007 | 1500 |

**a** Construct a column graph that Sarah can use in her article.

1. 

**b** How many more goals were scored in 2007 than in the year 2003?

**c** Sarah claims that the players are getting better as the years go on. Does her data support this claim? Explain your answer.