The City School

**North Nazimabad Boys Campus**

**Second Monthly Test Session 2019 – 20**

**Class - 11**

**Time: 35 Minutes Mathematics Marks 30**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Sec: \_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1 (a)** Kamal earned a total of $32 500 in 2017.

He paid 9% of this amount into his pension.

He paid 22% tax on the remainder of his earnings.

Calculate the amount left after paying his pension and his tax.

*Answer* $ ........................................... [3]

**(b)** Kamal invested $1200 in a savings account paying 1.8% per year compound interest.

He left the money in the account for 5 years.

Calculate the amount of money in the account at the end of 5 years.

Give your answer correct to the nearest cent.

*Answer* $ ........................................... [3]

**(c)** Kamal also invested some money in a different savings account for 5 years.

This account paid 2.1% per year **simple** interest.

At the end of 5 years there was $828.75 in the account.

Calculate the amount of money he invested in this account.

*Answer* $ ........................................... [3]

**Q2** The diagram at the bottom of the page shows the lines *AB* and *BC*.

**(a)** By measuring an angle, find reflex angle *ABC*.

*Answer .....................................* [1]

**(b)** The point *D* is on the opposite side of *AC* to *B*.

*CD* = *CB* and *AD* = 10 cm.

On the diagram, construct quadrilateral *ABCD*. [1]

**(c)** On the diagram, construct the locus of points, **inside** the quadrilateral *ABCD*, that are

**(i)** equidistant from *A* and *B*, [1]

**(ii)** equidistant from *BC* and *BA*. [1]

**(d)** On the diagram, shade the region **inside** the quadrilateral *ABCD* containing the points that are

nearer to *A* than to *B* and

nearer to *BC* than to *BA*. [1]

*C*

*A B*

Q3 The masses of 400 goats were measured.

The results are shown in the cumulative frequency graph.

400

300

Cumulative frequency

200

100

0

58 60 62 64 66 68 70 72

Mass (kilograms)

**(a)** Use the graph to find

**(i)** the median,

*Answer* ........................................... kg [1]

**(ii)** the 30th percentile,

*Answer* ........................................... kg [1]

**(iii)** the number of goats whose mass is more than 66 kg.

*Answer* ................................................. [1]

**(b)** It was noticed later that the scales used were faulty and that the true readings should all be 2 kg more.

On the grid above, draw the true cumulative frequency graph. [1]

Q4 Sunil recorded the lengths, in minutes, of the 150 phone calls he made one month.

His results are summarised in the table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Length of call (*t* minutes) | 0 1 *t* G 5 | 5 1 *t* G 10 | 10 1 *t* G 20 | 20 1 *t* G 30 | 30 1 *t* G 50 |
| Frequency | 35 | 42 | 30 | 28 | 15 |

**(a)** Calculate an estimate of the mean length of a call.

*Answer* ............................. minutes [3]

**(b)** On the grid below, draw a histogram to represent this data.

Frequency density

0

0 10 20 30 40 50

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Length of call (*t* minutes)

[3]

**(c)** Find an estimate for the percentage of Sunil’s calls that were longer than 25 minutes.

*Answer* ...................................... % [2]

*A C*

Q5 **(a)**

**(b)**

*B*

The point *D* is on the opposite side of *AC* to *B*.

*AD* = 6 cm and *CD* = 8 cm.

Construct triangle *ADC*. [1]

On the diagram, construct the locus of points **inside** the quadrilateral *ABCD* that are

**(i)** 2.5 cm from *AC*, [1]

**(ii)** equidistant from *AB* and *BC*. [1]

**(c)** The points *P* and *Q* are 2.5 cm from *AC* and equidistant from *AB* and *BC*.

Mark and label *P* and *Q* . Measure *PQ*.

*Answer PQ* = ....................... cm [1]