The City School

 North Nazimabad Boys Campus

# Subject: Mathematics

# Paper 2 (Practice Questions)

# Teacher: Sheema Aftab

Date: 28-11-2015

Q1: The distance from the Earth to the Sun is “e” kilometers, where e=1.5 $×$ $10^{8}$ .

The distance from the Sun to Mercury is m kilometers, where m=6$×10^{7}$.

1. Express e:m as the ratio of two integers in its simplest form. [1]
2. The diagram shows when the Earth, the Sun and Mercury are in a straight line, with the Sun between the Earth and Mercury.

Find the distance from the Earth to Mercury. Give your answer in standard form. [4]

Q2: a) in 2005, the cost of posting a letter was 28 cents. A company posted 1200 letters and was given 4$\%$ discount on the cost. Calculate the total discount. [1]

 b)in 2006, the cost of posting a letter was increased from 28 cents to 35 cents. Calculate the percentage increase in the cost of posting a letter. [2]

 c) After the price increase to 35 cents, the cost to the company of posting 1200 letters was

$\$ $399. Calculate the percentage discount that the company was given in 2006. [2]

Q3: [the value of $π$ = 3.142] in the diagram, the circle, centre O, passes through A and B. the radius of the circle is 4 cm and AOB = 45˚.

1. Find the area of the minor sector AOB. [3]
2. The tangent at A meets OB produce at T. find the shaded area. [2]

Q4: Factorize completely 2tv + t- 10v – 5. [1]

Make K the subject of the formula $√\frac{h}{k}$ = 3. [2]

Solve the equation $x^{2 }$- 23x + 81 = 0, giving both answer correct to two decimal places. [2]

Q5: T is inversely proportional to the square of l. Given that T= 9 when l=2, find

1. The formula for T in terms of L. [2]
2. The value of L when T=25. [3]