Week	dy Re	eview #3 Name:		
Show	All V	Work!		
1.	A teacher earns an annual salary of 45 000 USD for the first year of her employment Her annual salary increases by 1750 USD each year.			
	(a)	Calculate the annual salary for the fifth year of her employment.	(3)	
	She r (b)	remains in this employment for 10 years. Calculate the total salary she earns in this employment during these 10 years.	(3)	

(Total 6 marks)

2. The planet Earth takes one year to revolve around the Sun. Assume that a year is 365 days and the path of the Earth around the Sun is the circumference of a circle of radius 150 000 000 km.



diagram not to scale

(a) Calculate the distance travelled by the Earth in **one day**.

(4)

(b) Give your answer to part (a) in the form $a \times 10^k$ where $1 \le a < 10$ and $k \in \mathbb{Z}$.

(2)

(Total 6 marks)

3. 80 matches were played in a football tournament. The following table shows the number of goals scored in all matches.

Number of goals	0	1	2	3	4	5
Number of matches	16	22	19	17	1	5

(a)	Find the mean number of goals scored per match.	(2)
(b)	Find the median number of goals scored per match.	(2)
A lo	cal newspaper claims that the mean number of goals scored per match is two.	
(c)	Calculate the percentage error in the local newspaper's claim.	(2) (Total 6 marks)
The (a)	straight line <i>L</i> passes through the points A(-1 , 4) and B(5, 8). Calculate the gradient of <i>L</i> .	(2)
(b)	Find the equation of <i>L</i> .	(2)

The line *L* also passes through the point P(8, y).

(c) Find the value of *y*.

4.

(2) (Total 6 marks)

- 5. 75 metal spherical cannon balls, each of diameter 10 cm, were excavated from a Napoleonic War battlefield.
 - (a) Calculate the total volume of all 75 metal cannon balls excavated.

The cannon balls are to be melted down to form a sculpture in the shape of a cone. The base radius of the cone is 20 cm.

(b) Calculate the height of the cone, assuming that no metal is wasted.

(3) (Total 6 marks) **6.** Some of the customers in each café were given survey forms to complete to find out if they were satisfied with the standard of service they received.

	Pete's Eats	Alan's Diner	Sarah's Snackbar	Total
Dissatisfied	16	8	16	40
Satisfied	26	20	34	80
Total	42	28	50	120

One of the survey forms was chosen at random, find the probability that

(a)	the form showed "Dissatisfied";	(2)
(b)	the form showed "Satisfied" and was completed at Sarah's Snackbar;	(2)
(c)	the form showed "Dissatisfied", given that it was completed at Alan's Diner.	(2)
A χ^2 to different	est at the 5 % significance level was carried out to determine whether there was any ence in the level of customer satisfaction in each of the cafés.	
(d)	Write down the null hypothesis, H_0 , for the χ^2 test.	(1)
(e)	Write down the number of degrees of freedom for the test.	(1)
(f)	Using your graphic display calculator, find χ^2_{calc} .	(2)

(g) State, giving a reason, the conclusion to the test.

(2) (Total 12 marks)