



Science Numeracy homework task – February.

Please attempt all questions. If you get stuck, please see your teacher for help before the deadline date or use the Numeracy guide available on Bathgate Academy's school website.

PERCENTAGES

1. Calculate the following;

- a. 10% of 590 b. 25% of 180 c. 40% of 280
d. 75% of 12 e. 5% of 960 f. 45% of 45

2. Express the following as percentages;

- a. 12 out of 80 b. 33 out of 300 c. 280 out of 500
d. 28 out of 96 e. 12 out of 600 f. 350 out of 1750
g. one quarter h. two sixths i. $\frac{5}{8}$.

3. An S3 class tested how the force used to fire a rocket would affect how far a cardboard rocket they had designed could fly. They did this on the astro-turf pitch at the front of the school using an air pressured firing mechanism. The results are shown below;

Test number	Firing force used (N)	Distance travelled by rocket (m)
1	20	12
2	25	16
3	35	24
4	50	40
5	75	50
6	100	70

a. Compared to test number 2, what was the increase in distance the rocket travelled when the firing force was increased by;

(i) 40%; (ii) 100%; and (iii) 300%?

b. What was the percentage increase in distance travelled by the rocket between each subsequent test carried out (i.e., between test 1 & 2, 2 & 3 and so on)?

4. Astronauts typically spend 6 months at a time on the International Space Station (ISS).

The body mass of four astronauts was recorded prior to their departure for the ISS and then when they returned back to earth. The data collected was;

Astronaut	Body mass prior to departure (Kg)	Body mass on return to Earth (Kg)
A	100	85
B	80	70
C	84	68
D	75	72

a. Calculate the percentage decrease in body mass experienced by each astronaut.

b. Calculate the percentage increase in body mass required by each astronaut to get back to the body mass they had prior to departure.

