



## Science Numeracy homework task – November.

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.

### RATIOS

1. Calculate the **SIMPLEST** whole number ratios for;

- a. 10 : 5      b. 30 : 6      c. 4 : 28      d. 16 : 6  
e. 32 : 48      f. 90 : 54      g. 8 : 4 : 2      h. 15 : 6 : 24  
i. 120 : 300 : 75      j. 81 : 45 : 99      k. 2.1 : 7.7  
l. 12.4 : 3.1      m. 2.2 : 2.6 : 1.2      n. 0.24 : 0.36 : 0.72

2. Brass is an alloy of copper and zinc. The table below contains information about different types of brass.

Type of brass	Mass of copper in a 200g sample	Mass of zinc in a 200g sample	Simplest ratio of copper : zinc
Common brass	126	E	V
Abyssinian gold	A	20	W
High brass	130	F	X
Low brass	B	40	Y
Princes metal	C	G	3 : 1
Yellow brass	D	66.67	Z

Give the correct masses for boxes A–G and the ratios for boxes V–Z.

3. Two pupils tested a number of different materials in an electrical circuit to see if they conducted electricity and, if so, what current (measured in amps) they allowed to flow. The results were;

Material	Current (amps)
Paper	0
Copper wire	2.40
Brass ring	1.10
Bubble wrap	0
Iron nail	1.50
Zinc strip	1.20
Carbon rod	2.00
Cotton wool	0
Wooden pencil	0
Aluminium foil	0.80

What is the simplest whole number ratio of;

a. Conductors : insulators (non-conductors)

Current produced by;

b. Brass ring : zinc strip

c. Aluminium foil : carbon rod

d. Carbon rod : iron nail

e. Copper wire : zinc strip : iron nail?

Which conductors gave currents in the ratio of;

f. 2 : 1    g. 3 : 5    h. 4 : 5    i. 5 : 2 : 6?