PhyzJob: Prelims Patchwork

Significant Figures • SI Prefix Translations • Ratios

I. SIGNIFICANT FIGURES AND ORDER OF MAGNITUDE

a. In the gray space to the left of each "CALCULATOR" value, write the number of significant figures the value possesses.
b. To the right of each value, rewrite the value to two significant figures indicated (but without using scientific notation).
c. Then rewrite the rounded value in scientific notation. Use proper written notation (commas, "×10," etc.).
d. In the last column, write the nearest order of magnitude or power of ten of the number.

	CALCULATOR	2 SIG FIGS	2 SIG FIGS - SCI NOT	POWER OF TEN
9	673804.592	670,000	6.7×10^{5}	10^{6} or just +6
	2.73804590			0
	748			
	0.00125		1.3×10^{-3}	
1	0.000003			
	4.230291 06			
6	326.352 -03			
	600024538			

II. SI PREFIXES

Complete the table below.

VALUE	ENGINEERING	SI PREFIX
0.0005928 m	592.8×10^{-6} m	592.8 µm
864,000 s		
0.000 000 096 T		
	385×10^{-3} K	
75,300,000,000,000 J	75.3×10^{12} J	75.3 TJ
		349.5 pW
		160 zC
		400 GA

III. RATIOS

1. The air temperature drops by 35 Celsius degrees for a 5 kilometer increase in elevation.
a. What is the meaning of 35/5 in this context?

The number of Celsius degrees by which the temperature drops in each kilometer. (In atmospheric science, this is called the lapse rate.)

b. What is the meaning of 5/35 in this context?

The number of kilometers of increased elevation in which the temperature drops by one Celsius degree.

2. A motor provides 1,150,000 joules of energy in 30 seconds.
a. What is the meaning of 1,150,000/30 in this context?

b. What is the meaning of 30/1,150,000 in this context?

3. A 5-kilogram object has a weight on earth of approximately 50 newtons.
a. What is the meaning of 50/5 in this context?

b. What is the meaning of 5/50 in this context?