Spaceflight Fundamentals™

Name: ANSWER KEY

Class: _____

Hour: _____

Orbital Mechanics - Worksheet 1-1

Significant Figures Worksheet

For the following problems, determine the correct number of significant figures present. Write the number of significant figures present in the blank to the right of each problem.

1.	450.06 grams	5
2.	920 deciliters	2
3.	30,000 miles	1
4.	6.02×10^{23} molecules	3
5.	786.5 centimeters	4
6.	413.78 inches	5
7.	1001 feet	4
8.	14 spoons	Infinite
9.	1200 kilograms	2
10.	19,021 yards	5
11.	67.0380 millimeters	6
12.	0.004090 deciliters	4
13.	7 goldfish	Infinite
14.	1.237×10^{-8} tons	4
15.	4.95×10^{3} pounds	3
16.	28 beakers	Infinite
17.	0.9877 micrometers	4
18.	0.00607 grams	3
19.	0.0008060 dynes	4
20.	1200 volts	2
21.	6392 pounds	4
22.	1010 nautical miles	3
23.	3000.340 quarts	7
24.	10.20 furlongs	4
25.	56.930 drams	5
26.	21 cockroaches	Infinite
27.	48 matches	Infinite
28.	789 ounces	3
29.	6504 gallons	4
30.	1200.6840 pints	8

Spaceflight Fundamentals™

ame: ANSWER KEY

Class: _____

Hour: _____

Orbital Mechanics - Worksheet 1-2

Significant Figures and Calculations Worksheet

For the following problems, calculate the results and determine the correct number of significant figures to report. Display your answers in the appropriate blanks. Do not forget to include the correct units.

1. 4000 L^2 = 123.67 L x 30 L
3. 1.41 g/mL = 45.89 g ÷ 32.6 mL
3. 1000 ft^2 = 130 ft x 10 ft
4. 3.000 g/beaker = 12.00 g ÷ 4 beakers
5. 15 kg m/s^2 = 3.68 kg x 4.0 m/s^2
6. 1 kg m/s = 50 kg x 0.0203 m/s
7. 160 mi/hr = 5001 mi ÷ 32 hrs
8. 20 ft/s = 890 ft ÷ 40 s
9. 208 lbs/student = 832 lbs ÷ 4 students
10. 5.88 g/L = 594.060 g ÷ 101 L
11. 302.1 g = 4.780 L x 63.20 g/L
12. 2100 km^2/s^2 = 34 km/s x 63.2 km/s
13. 60,000 mL^2 = 87.080 mL x 700 mL
14. 0.0029 kg m/s = 4.0 x 10^{-2} kg ÷ 13.6 s/m
15. 0.00120 m^3 = 0.03010 m^2 x 0.0400 m
16. 105 beakers = 120 beakers - 15 beakers
17. 5.46 m = 10.02 m - 4.5602 m
18. 100 mi = 100 mi - 41 mi
19. 78.1 in = 64.02 in + 14.1 in
20. 6300 yds = 6300 yds + 34 yds
21. 3.960 cm = 4.020 cm - 0.060 cm
22. 61 kg = 45 kg + 16.2 kg
23. 67.04 s = 67.00 s + 0.04 s
24. 710 N = 720 N - 6 N
25. 1 ft/s^2 = 32.0 ft/s^2 - 31 ft/s^2
26. 417 g/mL = 406 g/mL + 11 g/mL
27. 20 cc = 32 cc - 10 cc
28. 446 cats = 456 cats - 10 cats
29. 290 K = 273 K + 20 K
30. 0.0010 µm = 0.0040560 µm - 0.0031 µm