Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_\_\_

**Worksheet: Unit Conversion Practise**

**Reference**

**Base SI Units:** distance in **m** (meters), time in **s** (seconds), mass in **g** (grams), energy in **J** (Joules)

You can add any prefix to a base SI unit to modify its value.

E.g. grams (g) is the base unit; 1 kilogram (kg) is equal to 1,000 grams.

E.g. second (s) is the base unit; 1 nanosecond (ns) is equal to 0.000000001 seconds.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Prefix** | **Symbol  (capitalization matters!)** | **Scientific Notation** | **Meaning** | **Example** |
| **giga-** | G | 109 | 1,000,000,000 | 1 Gm (gigameter) = 1,000,000,000 m |
| **mega-** | M | 106 | 1,000,000 | 1 Mm (megameter) = 1,000,000 m |
| **kilo-** | k | 103 | 1,000 | 1 km (kilometer) = 1,000 m |
|  |  | 100 | 1 | 1 meter = 1 meter |
| **centi-** | c | 10-2 | 0.01 | 1 cm (centimeter) = 0.01 m |
| **milli-** | m | 10-3 | 0.001 | 1 mm (millimeter) = 0.001 m |
| **micro-** | µ | 10-6 | 0.000001 | 1 µm 1 micrometer = 0.000001 m |
| **nano-** | n | 10-9 | 0.000000001 | 1 nm = 1 nanometer = 0.000000001 m |

**Time Units:** 60 s = 1 min 60 min = 1 hr 24 hr = 1 day 365 days = 1 yr

**Energy Units:** 1 Calories = 4184 J (Joules)

**Mass Units:** 1 pound = 0.454 kg

**Length Units**: 1 inches = 2.54 cm 12 inches = 1 feet 1 miles = 1.61 km

*Convert the following to the desired unit.*

|  |  |
| --- | --- |
| 1. 3.2 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m 2. 38,942 m = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ km 3. 489 g = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kg 4. 0.43 kg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g 5. 2800 ms = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ s 6. 28 cm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m 7. 5,890 mm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm 8. 290 g = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kg 9. 8,918 J = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kJ 10. 2.3 cm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m 11. 89 cg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g 12. 23,000 µm = \_\_\_\_\_\_\_\_\_\_\_\_\_ m 13. 889,290 g = \_\_\_\_\_\_\_\_\_\_\_\_\_ Mg 14. 389 ms = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ s 15. 2.8 µm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nm 16. 732 nm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ µm 17. 0.0014 km = \_\_\_\_\_\_\_\_\_\_\_\_\_ cm 18. 180 mm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ µm 19. 0.0002 kg = \_\_\_\_\_\_\_\_\_\_\_\_\_ mg | 1. 230 s = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ min 2. 490 Calories = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ J 3. 289 inches = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ feet 4. 68 miles = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ km 5. 3.2 kg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pounds 6. 5882 s = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ min 7. 823 mm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inches 8. 37895 s = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hr 9. 2.3 kJ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calories 10. 289,058 ms = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ min 11. 5,890 inches = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m 12. 223 g = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pounds 13. 0.02 mm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ µm 14. 70 inches = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm 15. 1.5 year = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ s 16. 35 miles/hour = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ km/hour 17. 1200 km/hour = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ km/min 18. 59 m/s = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ km/hour 19. 44.72 km/h = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m/s |