Physics 122–Winter 2026– Math Readiness Check–Reza Monadi

Time: 15 minutes

Instructions: Complete all problems without notes. A scientific calculator is allowed. Show your work clearly.

1. **Scientific Notation**

   Evaluate and express your answer in scientific notation:
   $$(6.0 \times 10^3)(4.0 \times 10^{-5})$$

2. **Unit Conversion**

   Convert the following quantity:
   $$0.30 \text{ g/cm}^3 \quad \text{to} \quad \text{kg/m}^3$$

3. **Trigonometry (Radians)**

   An angle is given by
   $$\theta = \frac{3\pi}{4}.$$

   (a) Find $\sin\theta$.

   (b) State whether the value is positive or negative and briefly explain why.

4. **Algebraic Manipulation**

   Solve for x:
   $$5x - 2 = 3(x + 4)$$

5. **Proportional Reasoning**

   A quantity Q is proportional to the square of x:
   $$Q \propto x^2.$$

   If x is doubled, by what *factor* does Q change?

I promisse that I have neither given nor received any help on this quiz.

Full Name:————————————————

Signature:————————————————