

Solutions: Math Readiness Self-Test

If you rounded differently in some intermediate steps, it's OK if your final answer is a little different. The focus here is on the strength of your algebra skills.

$$1) \frac{5}{3} = \frac{x(\cancel{3})}{\cancel{3}}$$

$$\boxed{1.67 = x}$$

$$6) \begin{cases} 3x^2 + 2x = 7 \\ 3x^2 + 2x - 7 = 0 \end{cases} \begin{cases} a=3 \\ b=2 \\ c=-7 \end{cases}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{-2 \pm \sqrt{(2)^2 - 4(3)(-7)}}{2(3)}$$

$$= \frac{-2 \pm \sqrt{88}}{6}$$

$$\rightarrow x = \frac{-2 + 9.38}{6} \quad \boxed{x = 1.23}$$

$$\rightarrow x = \frac{-2 - 9.38}{6} \quad \boxed{x = -1.90}$$

$$2) \begin{aligned} 53 &= 19 - 10x \\ 53 - 19 &= -10x \\ 34 &= -10x \end{aligned}$$

$$\boxed{-3.4 = x}$$

7)

$$2453 = \frac{(142)^2}{x}$$

$$2453x = (142)^2$$

$$x = \frac{(142)^2}{2453}$$

$$\boxed{x = 8.22}$$

$$3) \begin{aligned} x^2 &= (4)^2 + 2(10)(9) \\ x^2 &= 16 + 180 \end{aligned}$$

$$x = \sqrt{196}$$

$$\boxed{x = \pm 14}$$

$$8) \left(\frac{1}{2}\right)(200)(3)^2 + (4.5)(10)(7.3) = \left(\frac{1}{2}\right)(5)x^2$$

$$900 + 328.5 = 2.5x^2$$

$$1228.5 = 2.5x^2$$

$$491.4 = x^2$$

$$\boxed{\pm 22.2 = x}$$

$$4) \begin{aligned} 35 &= (6)(4) + \left(\frac{1}{2}\right)(10)x^2 \\ 35 &= 24 + 5x^2 \\ 11 &= 5x^2 \end{aligned}$$

$$\sqrt{\frac{11}{5}} = x$$

$$\boxed{\pm 1.48 = x}$$

$$9) x = \frac{(9 \times 10^9)(4 \times 10^{-6})(4 \times 10^{-6})}{(2)^2}$$

$$\boxed{x = .036}$$

$$5) \begin{aligned} 1.8 &= \left(\frac{1}{2}\right)(3.5+x)(4.9) \\ 1.8 &= \left(\frac{1}{2}\right)(4.9)(3.5+x) \\ 1.8 &= \frac{2.45}{2.45}(3.5+x) \end{aligned}$$

$$.735 = 3.5 + x$$

$$\boxed{-2.77 = x}$$

$$10) \frac{1}{x} = \frac{1}{5} + \frac{1}{47} + \frac{1}{23}$$

$$\frac{1}{x} = .264755$$

$$\boxed{x = 3.78}$$