Solutions to Mathematical Survey

Q 2.1-2.3 $$x = \frac{6}{8}$$
Q 2.4 $$x^{20}$$
Q 2.5 $$x^{7}$$
Q 2.6 False
Q 2.7 $$\frac{16}{7}$$
Q 2.8 $$\frac{37}{64}$$
Q 2.9 $$\frac{8}{\Delta y}$$
Q 2.10 $$t = \sqrt{\frac{v_0}{3}}$$
Q 2.11 $$v = \sqrt{G(M_1 + M_2)}$$
Q 3.1 $$\frac{3 + 2y^3 - 9z^{-2}}{x}$$
Q 3.2 $$x = \frac{-6z \pm \sqrt{36z^2 - 20y^2 z}}{2y}$$

Q 3.3

$$y = \frac{1}{5}$$

Q 3.4

$$\frac{P_1}{P_2} = 6$$

Q 3.5

$$\frac{1}{2(z-1)} - \frac{1}{2(z+1)} = \frac{z+1}{2(z-1)(z+1)} - \frac{z-1}{2(z+1)(z-1)} = \frac{2}{2(z-1)(z+1)} = \frac{1}{(z-1)(z+1)}$$

Q 4.2

$$|x| = \frac{3}{2}$$

Q 5.1

True

Q 5.2-5.3

$$x \approx 3$$

Q 5.2-5.3

$$\frac{1}{3\log(x)} + \frac{1}{3} + \frac{\log(y)}{3\log(x)}$$

Q 6.1

$$\approx 1.176 \text{ rad}$$

Q 6.2

False

Q 6.3

$$-9\pi \leq 9\pi \sin(\theta) \leq 9\pi$$

Q 6.3

True

Q 6.4

True

Q 6.6

$$\approx 1.176 \text{ radians}$$

Q 7

Both are False
