

14pt

10c $\log_2(x) + \log_2(x+2) = 3$

$$\log_2 x(x+2) = 3$$

$$x(x+2) = 2^3$$

$$x^2 + 2x - 8 = 0$$

$$(x+4)(x-2) = 0$$

~~$x = -4$~~ $x = 2$

↑
doesn't work!

14pt

11

$$P(h) = 14.7 e^{-0.000385h}$$

$$7.35 = 14.7 e^{-0.000385h}$$

$$\frac{1}{2} = e^{-0.000385h}$$

$$\ln(.5) = -0.000385h$$

$$\frac{\ln(.5)}{-0.000385} = h$$

$1800 \text{ ft} \approx h$

12 4pt

a) $\cos\left(-\frac{5\pi}{4}\right) = \boxed{-\frac{\sqrt{2}}{2}}$

4pt

b) $\sin\left(\sin^{-1}\left(\frac{\pi}{3}\right)\right) = \boxed{\frac{\pi}{3}}$

4pt

c) $\cos(15^\circ) = \cos(45^\circ - 30^\circ)$
 $= \cos 45^\circ \cos 30^\circ + \sin 45^\circ \sin 30^\circ$
 $= \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{2} + \frac{\sqrt{2}}{2} \cdot \frac{1}{2} = \boxed{\frac{\sqrt{6} + \sqrt{2}}{4}}$