

1.) a) $f(x) = 2 \cdot \sin(3x)$; $p = \frac{2\tilde{\pi}}{3}$; Amplitude = 2

b) $f(x) = 3 \cdot \sin(0,5x)$; $p = \frac{2\tilde{\pi}}{\frac{1}{2}} = 4\tilde{\pi}$; $A = 3$

c) $f(x) = 0,1 \cdot \sin(\tilde{\pi}x)$; $p = \frac{2\tilde{\pi}}{\tilde{\pi}} = 2$; $A = 0,1$

d) $f(x) = -2 \sin(1 \cdot x - 2)$; $p = \frac{2\tilde{\pi}}{1} = 2\tilde{\pi}$; $A = |-2| = 2$

e) $f(x) = 0,5 \cdot \sin(4 \cdot (x-3))$; $p = \frac{2\tilde{\pi}}{4} = \frac{1}{2}\tilde{\pi}$; $A = 0,5$

f) $f(x) = -1 \cdot \sin\left(\frac{1}{2}(x+0,2)\right)$; $p = \frac{2\tilde{\pi}}{\frac{1}{2}} = 4\tilde{\pi}$; $A = |-1| = 1$

2.) a) $f(x) = \sin(k \cdot x)$; $p = \tilde{\pi}$; $p = \frac{2\tilde{\pi}}{k} \Rightarrow k = \frac{2\tilde{\pi}}{p} = \frac{2\tilde{\pi}}{\tilde{\pi}} = 2$

$f(x) = \sin(2 \cdot x)$

b) $f(x) = \sin(k \cdot x)$; $p = 4\tilde{\pi}$; $k = \frac{2\tilde{\pi}}{p} = \frac{2\tilde{\pi}}{4\tilde{\pi}} = \frac{1}{2}$

$f(x) = \sin\left(\frac{1}{2} \cdot x\right)$

c) $\sin(kx)$; $p = 3$; $k = \frac{2\tilde{\pi}}{3} \Rightarrow f(x) = \sin\left(\frac{2}{3}\tilde{\pi} \cdot x\right)$

d) $f(x) = \sin\left(\frac{x}{k}\right)$; $p = 2$; $2 = \frac{2\tilde{\pi}}{\frac{1}{k}} = k \cdot 2\tilde{\pi} \Rightarrow k = \frac{2}{2\tilde{\pi}} = \frac{1}{\tilde{\pi}}$

$f(x) = \sin\left(\frac{x}{\frac{1}{\tilde{\pi}}}\right) = \sin(\tilde{\pi} \cdot x)$

e) $f(x) = \sin(k(x-2))$; $p = 2\tilde{\pi}$; $k = \frac{2\tilde{\pi}}{2\tilde{\pi}} = 1$

f) $f(x) = -\sin\left(\frac{x}{2k}\right)$; $p = \tilde{\pi}$; $\tilde{\pi} = \frac{2\tilde{\pi}}{\frac{1}{2k}} = 4k \cdot \tilde{\pi} \Rightarrow k = \frac{\tilde{\pi}}{4\tilde{\pi}} = \frac{1}{4}$

$f(x) = -\sin\left(\frac{x}{2 \cdot \frac{1}{4}}\right) = -\sin\left(\frac{x}{\frac{1}{2}}\right) = -\sin(2x)$