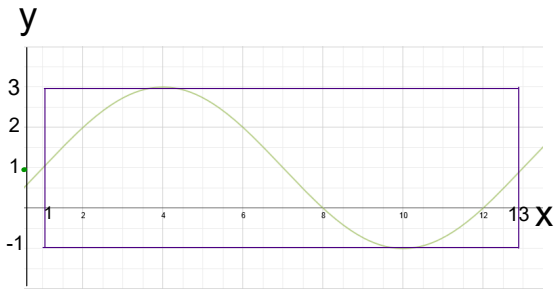
Study of the function y=asinb(x-h) + k pg 221

One cycle of the function $f(x) = 2 \sin \frac{\pi}{6}(x-1) + 1$



Period: 12 Amplitude: 2

dom f: $\mathbb{R}$ ran f: $[-1, 3]$

Zeros over [1,13]: 8 and 12

Zeros over R: $S = \{8 + 12n, 12 + 12n\}, n \in \mathbb{Z}$

f(x) ≥ 0 over [1,13]: $[1, 8] \cup [12, 13]$

f(x) ≤ 0 over [1,13]: $[8, 12]$

f(x) ≥ 0 over R: $[1 + 12n, 8 + 12n] \cup [12 + 12n, 13 + 12n]$

f(x) ≤ 0 over R: $[8 + 12n, 12 + 12n]$

Variation over [1,13]:

f / over $[1, 4] \cup [10, 13]$

f \ over $[4, 10]$

Variation over R:

f / over $[1 + 12n, 4 + 12n] \cup [10 + 12n, 13 + 12n]$

f \ over $[4 + 12n, 10 + 12n]$

Max: Min: $\min f = -1$

$\max f = 3$

Green Book:

Pg 251-252 # 8-13