Peaks in |X[k]| when $F_s <$ frequency of x[n]

$x = (\omega t)\%2\pi$
Here, $\omega = 20\pi$
After sampling, $t = \frac{n}{F_s}$
Thus, $x = 2\pi \cdot (10n/F_s)\%1$, for $n = 1,2,\ldots,\lfloor 5F_s \rfloor$

Now, when we take a Fourier transform,

$$X[k] \propto \sum_n x[n] e^{-2\pi \frac{k}{N} n}$$

$$X[k] \propto \sum_n (10n/F_s)\,\%1 \;\times e^{-2\pi \frac{k}{N} n}$$

Now, depending upon the frequency of $x[n]$, we get peaks in |X|

E.g., when $F_s = 7.5$,

$$X[k] \propto \sum_n (n/3)\,\%1 \times e^{-2\pi \frac{k}{N} n}$$

The period of x[n] is 3, or the frequency is 1/3.
The peak will occur when the second term (exp), will also have the same frequency, i.e., when k/N = 1/3.

If you choose N=512, then k=512/3 = 171.