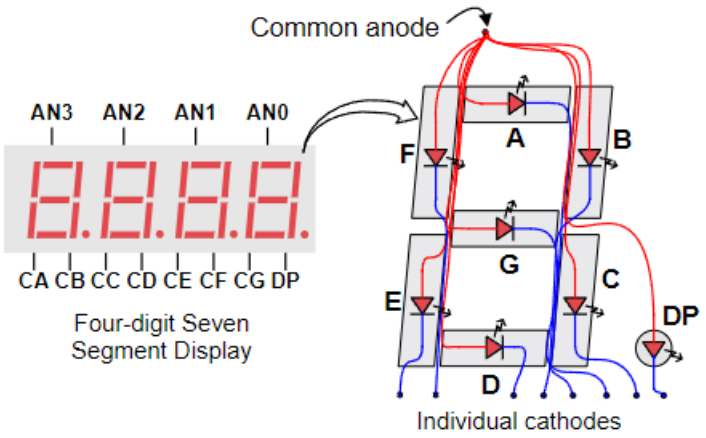
2.a: A common Anode because the anode of all the LED in Seven Segment Display is tied together as show in the picture below



2.b: the logic 0 will turn the LED on.

2.c: the clock time period is 10ns so it's frequency is 1/(10^(-9)) = 10^9 HZ

For our LED to work the basys 3 manual recommend that the frequency is between 60 to 1000 HZ And each of the bit we add to the ClockDivider will divide the clock frequency by 2 time

So we get that log ((10^8)/6) >= the bit we need >= log(10^6) ; for log is a log base 2

From calculation we get 23.99 >= the bit we need >= 19.93; but the bit we need is an integer

So, we must round up thus we get 23 >= the bit we need >= 20

ANS the bit we need must be in range of 20 to 23.