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HW 2A

Question 1

- A) Timer_A uses a 500KHz clock signal. What is the timer's period (in seconds) if the continuous mode is used? Give answer for all ID values.

$$\frac{65535 \text{ cycles}}{500K \text{ cycles}} \text{ second} = 0.13107 \text{ seconds}$$

Time period (s)	ID = x
0.13107s	/1 0
0.26214s	/2 1
0.52428s	/4 2
1.04856s	/8 3

- B) We're aiming at a timer period of .4 seconds using the upmode. Find values for TACCR0 and ID.

$$\frac{.4 \text{ seconds}}{\text{second}} \times 500K \text{ cycles} = 200,000 \text{ cycles}$$

Cycles (TACCR0)	ID = x
200,000	/1 0
100,000	/2 1
50,000	/4 2
25,000	/8 3

TACCR0 = 50,000 ID = 2
TACCR0 = 25,000 ID = 3

we can only use these two we are limited to 65535 for TACCR0

HW 2A

Question 2

- A) Timer_A is using ACLK configured to 8 KHz (8,192 Hz) crystal. What is the period if the Continuous mode is used? Give the answer for all the values for Input Divider

$$\frac{65535 \text{ cycles}}{8192 \text{ cycles}} \times \text{Second} = 7.99 \text{ seconds} \approx 8 \text{ seconds}$$

Time period (s)	ID-x
8 seconds	/1 0
16s	/2 1
32s	/4 2
64s	/8 3

- B) Timer_A using 6MHz clock signal. Can we configure the timer to (directly) generate a delay of .5s? Show Analysis.

$$.5s \times 6000000 \text{ cycles/s} = 3000000 \text{ cycles}$$

Cycles	ID-x	No, we cannot directly generate a delay of .5 seconds because our TAR register caps at 65535. But we could
3,000,000	/1 (0)	
1,500,000	/2 (1)	
750,000	/4 (2)	
375,000	/8 (3)	

Add a for loop with multiple delays.

```
for(i=0; i<5; i++){
    while flag is 0.
        Clear Flag.
}
```

