

PSEUDOCODE QUESTION 1

```
LOOP FOR COUNTER = 2 TO COUNTER < 8 INCREMENT COUNTER BY 1
```

```
    Y = COUNTER * 2  
    Y = Y + 6  
    Y = Y / 2  
    Y = Y - COUNTER  
    WRITE Y
```

```
    IF Y > 3 THEN  
        EXIT LOOP  
    END IF
```

```
END LOOP
```

- 1) How many iterations will the loop perform?
- 2) What is the value of Y when the COUNTER is equal to 3?
- 3) What is the value of Y when the loop completes?
- 4) In correct order list out the values written to the output file.

Base your answers to questions 5 - 10 on the code after removing lines 3 and 4 from the code block.

- 5) How many iterations will the loop perform?
- 6) Will EXIT LOOP be called?
- 7) List the value(s) of Y in correct order.

Change line 1 of the code to the following:

```
LOOP FOR COUNTER = 2 TO COUNTER < 10 INCREMENT COUNTER BY 2
```

- 8) How many iterations will the loop perform?
- 9) Will EXIT LOOP be called?
- 10) List the value(s) of Y in correct order.

ANSWERS to PSEUDOCODE QUESTION 1

Set up the number of iterations
counter

2
3
4
5
6
7

8? No - the instructions say less than 8 so stop at 7

Now go back and figure out the values for Y at each point
The Y.2 notation means value of Y after line 2 completes.

counter	Y.2	Y.3	Y.4	Y.5
2	4	10	5	3
3	6	12	6	3
4	8	14	7	3
5	10	16	8	3
6	12	18	9	3
7	14	20	10	3

Do we ever hit the EXIT LOOP because $Y > 3$? NO.

- 1) Number of iterations = 6
- 2) Value of Y when counter is 3 = 3
- 3) Value of Y when loop completes = 3
- 4) Output = 3,3,3,3,3,3

Re-process after removing lines 3 and 4

counter	Y.2	Y.5
2	4	2
3	6	3
4	8	4
5	10	5
6	12	6
7	14	7

Do we ever hit the EXIT LOOP because $Y > 3$? YES.

We will exit AFTER completing the 3rd iteration (count 4)

counter	Y.2	Y.5
2	4	2
3	6	3
4	8	4

- 5) Number of iterations = 3
- 6) EXIT LOOP? YES
- 7) Output = 2,3,4

Re-process after removing lines 3 and 4 and changing ln 1

counter	Y.2	Y.5
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2	4	2
---	---	---

4	8	4
---	---	---

6	12	6
---	----	---

8	16	8
---	----	---

10	No - the instructions say less than 10	
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Do we ever hit the EXIT LOOP because $Y > 3$? YES.

We will exit AFTER completing the 2rd iteration (count 4)

counter	Y.2	Y.5
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2	4	2
---	---	---

4	8	4
---	---	---

8) Number of iterations = 2

9) EXIT LOOP? YES

10) Output = 2,4