

**Worksheet: Review, Part 2**

1. A learner hands in three homework assignments, which were each given a mark out of 10. All of the marks were different (but that actually doesn't matter for the question). The textbook on page gives a flowchart representing part of an algorithm to find the highest mark, but there are three errors in the diagram.

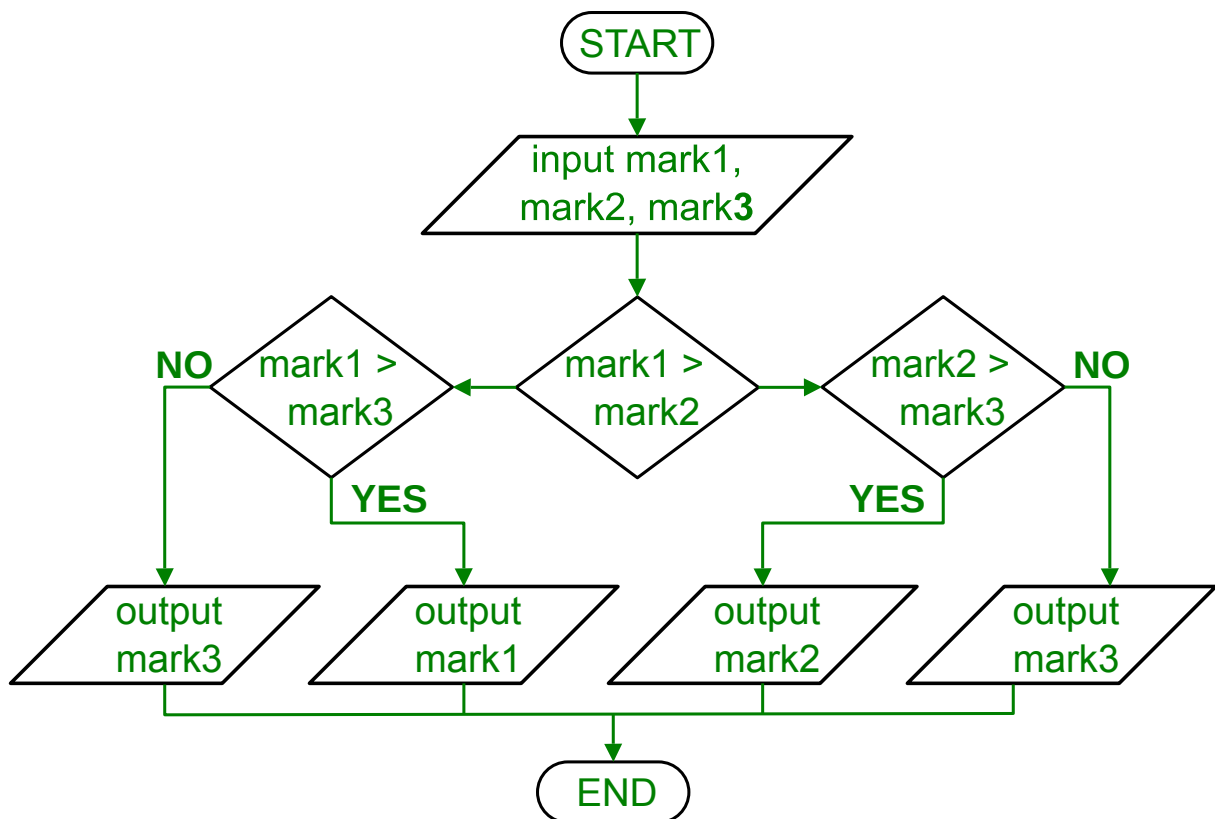
a) In full sentences, describe each of the three errors in the diagram for question 8 of unit 1 (it is in the textbook on page 31). Do not consider the missing END block an error. (3)

i) *In the first input block, the input "mark1" is listed twice. The inputs should be "mark1, mark2, mark3".*

ii) *The first decision block should have two outputs. The arrow on the left side should be pointing outwards, not inwards.*

iii) *The four bottom input/output blocks are labeled as inputs, but the algorithm should output the result. Each of these four should be output blocks.*

b) Use the diagram from your textbook (Unit 1 question 8 on page 31) to correct and complete the diagram. You will need to add the appropriate arrows, fill in each block with the appropriate text, and add YES/NO labels where required. (5)

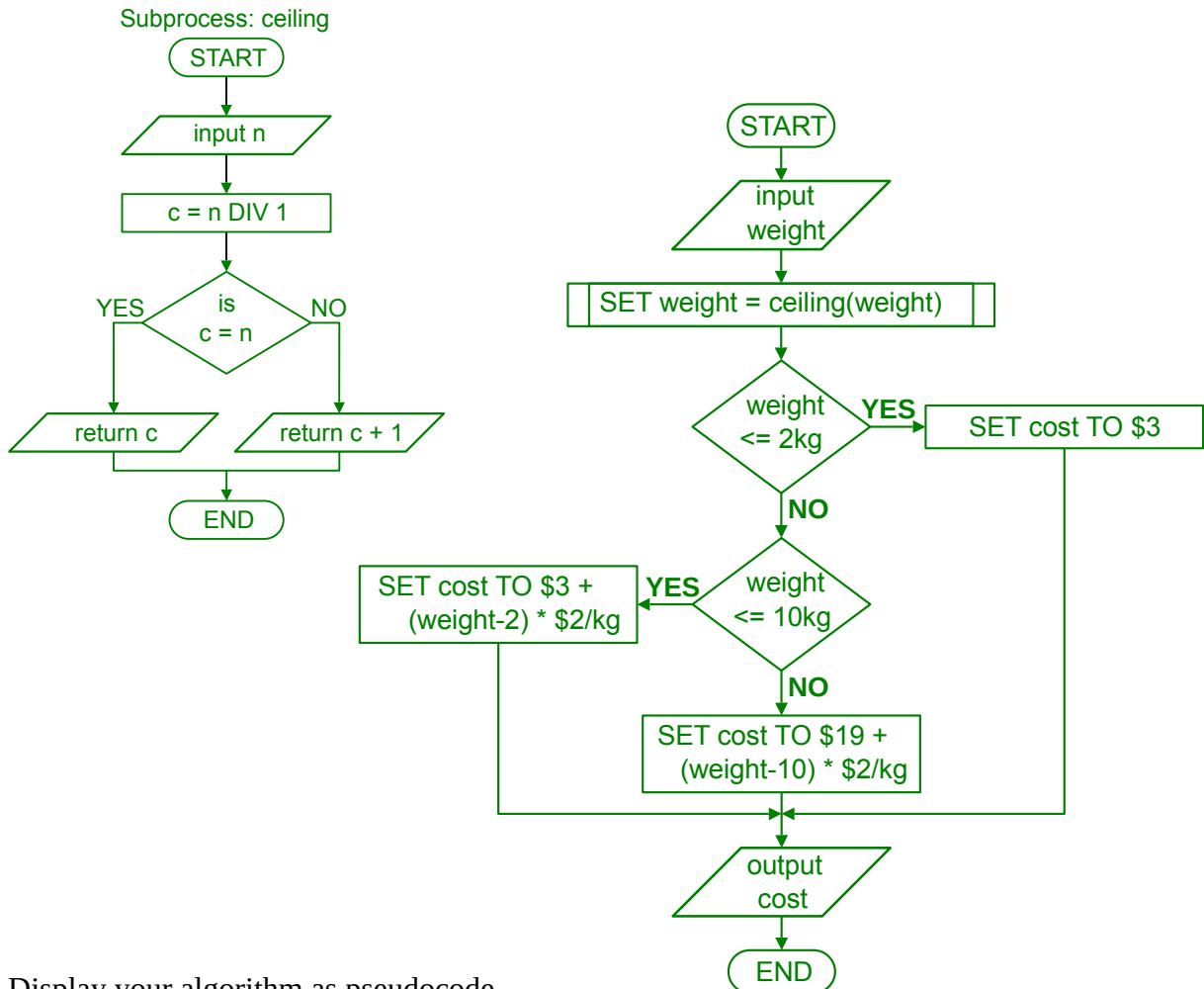


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2. Create an algorithm to calculate the cost of sending a parcel. If the weight of the parcel is 2kg or under, then the standard charge is \$3. There is then a charge of \$2 for each extra kilogram up to 10kg. After 10kg, the charge per extra kilogram is \$3.

a) Display your algorithm as a flowchart

(5)



b) Display your algorithm as pseudocode.

The pseudocode algorithm must be exactly the same as your flowchart algorithm.

(5)

```

RECEIVE weight FROM scale
SET weight TO ceiling(weight)
IF (weight <= 2) THEN
    SET cost TO 3
ELSE
    IF (weight <= 10) THEN
        SET cost TO 3 + (weight-2) * 2
    ELSE
        SET cost TO 19 + (weight-10) * 3
    END IF
END IF
SEND cost TO DISPLAY
    
```

```

FUNCTION ceiling(num)
BEGIN FUNCTION
    SET value TO num DIV 1
    IF(value = num) THEN
        RETURN value
    ELSE
        RETURN value + 1
    END FUNCTION
    
```