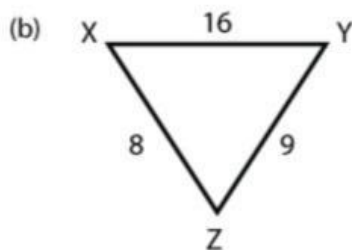
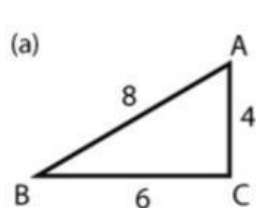


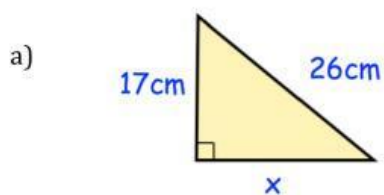
Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Task 1

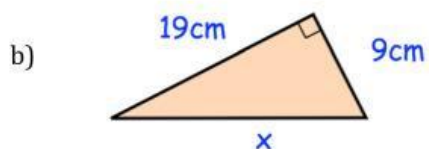
Q1) Order the angles from the smallest to the largest:



Q2) Find the range of possible values for x:



\_\_\_\_\_ < x < \_\_\_\_\_



\_\_\_\_\_ < x < \_\_\_\_\_

## Task 2

An engineer in Abu Dhabi is designing a triangular support frame for a shade structure.

He is choosing between two designs:

### Design A

- AB: 6 m, BC: 8 m, CD:13 m

### Design B

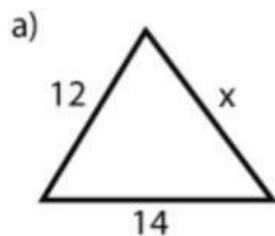
- AB:6 m, BC:8 m, CD:10 m

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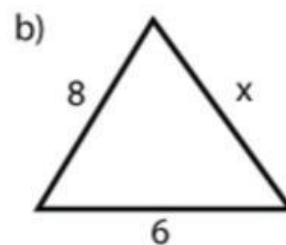
### ? Question:

1. Which design can actually form a triangle?
2. For the valid design, **identify and justify which angle is the largest.** (Opposite to which side?)

Q3: Find the range of possible values for x:



\_\_\_\_\_



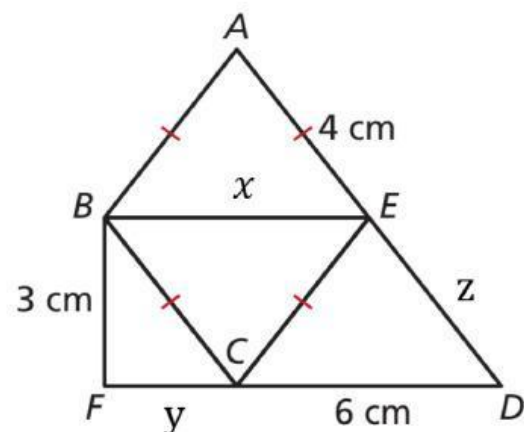
\_\_\_\_\_

### Task 3

Q1) Nakia is an architect designing a house with a peaked roof. She is trying to decide what the limitations are on her design. If  $AB$  is 8 feet and  $\triangle ABC$  will be isosceles ( $AB=BC$ ), describe the possible lengths for  $AC$  (Range of values for  $x$ )



Q2) Describe the values that are possible for the lengths of  $x, y, z$ .



Task 4: Extension

**Given:**  $\triangle ABC \cong \triangle DEF$

**Prove:**  $d + e > c$

