Multiple choice section

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Answer | D | A | B | A | C | C | B |

Question 1 [9.5]

D

False. A kite has two pairs of adjacent sides equal. The other statements are true.

Question 2 [9.1]

A

AAA is not one of the tests for congruence of triangles.

Question 3 [9.1]

B



Question 4 [9.2]

A

 with  can be used as part of a test for congruency because they are alternate angles.

Question 5 [9.3, 9.5]

C

SSS. Corresponding sides are equal.

Question 6 [9.2]

C

Triangles I and III satisfy ASA.

Question 7 [9.4]

B

 is incorrect. These triangles are similar not congruent.

Question 8 [9.6] [10A]

B

 = 114°

 = 57°

Multiple-choice total marks: 8

Short answer section

Question 9 2 marks [9.2]

**(a)** The *included angle* is made by two lines with a common vertex.

**(b)** The *definition* of a scalene triangle is that all three sides are of different lengths.

Question 10 2 marks [9.2]

Two figures are congruent if they have the same shape and size. Two similar figures have the same shape and corresponding angles are equal but corresponding sides are of different lengths. The corresponding sides are in the same proportion and the ratio of corresponding sides is called the dilation factor.

Question 11 4 marks [9.1]

**(a)** In , and *YZ* = 9 cm.



In .



All corresponding angles are equal. (AAA)

(b) *AB* = 4*XY*  
*BC* = 4*YZ*  
= 36 cm

Question 12 2 marks [9.2]

If the corresponding angle is not an included one, triangles can be formed that are not congruent.

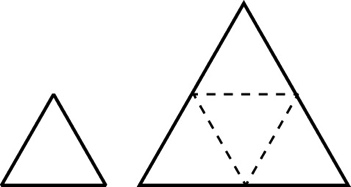
If the included angle is the same, the two known side lengths will create a third pair that are the same length. Therefore the angle must be included to ensure congruency.

Question 13 3 marks [9.1]





Question 14 3 marks [9.1]

(a) Medium e.g. ACH, small e.g. ABI   


(b) ABFH, BIGF, ACEI, BDEI, GECH, DFHC are all congruent parallelograms.

(c) BCEFHJ, CEFHIJ, EFHIBJ, FHIBCJ, HIBCEJ, IBCEFJ are all congruent shapes.

Question 15 3 marks [9.3]

 (alternate angles)

 (alternate angles)

 (vertically opposite angles) so AAA applies.

Question 16 5 marks [9.2]

(a) Dilation factor =  = 1.5  
New length = 1.5 × 7 = 10.5 m

(b) Dilation factor = =   
New width =  = 6 m

(c) Dilation factor =  ×  = 2.5

Question 17 3 marks [9.3]

*AB* = *BC* (all sides of a rhombus are equal)

*AD* = *DC* (all sides of a rhombus are equal)

*BD* is common.

 (AAS)

Question 18 3 marks [9.2]

|  |  |
| --- | --- |
| (a)   x = 2.33 m | (b) Distance of the tree from the wall = 2.33 – 0.6 = 1.73 m |

Short answer total: 30

Extended answer section

Question 19 5 marks [9.3]

**(a) ** (angles of equilateral triangles)  
  
****  
****

**(b)** For ****  
**** (proved)  
*QP* = *QZ* (given)  
*QY* = *QX* (given)  
**** (SAS)  
*YP* = *XZ* (corresponding sides of congruent triangles)

Question 20 8 marks [9.2, 9.3]

(a) For   
∠EBC = ∠ADC = 90° (given)  
 EC = AC (given)  
 BC = DC (given)  
 (RHS)

(b) For   
ED = EC – DC  
 = AC – BC  
 = AB  
 (vertically opposite angles)  
 (given)  
 (AAS)

(c) For   
EF = AF (corresponding sides of congruent triangles)  
 (corresponding angles of congruent triangles)  
 EC = AC (given)  
 (SAS)  
 (corresponding angles of congruent triangles)  
CG bisects 

Question 21 6 marks [9.3]

**(a)** For:

*MK* is a common side

*JK* = *LK* (given)

*JM* = *LM* (given)

**** (SSS)

**(b)** For ****

*MN* is a common side.

**** (corresponding angles of congruent triangles)

*JM* = *LM* (given) **** (SAS)

**(c)** For ****

*JN* = *LN* (corresponding sides of congruent triangles)

*KN* is a common side

*JK* = *LK* (given)

**** (SSS)

Question 22 4 marks [9.6] [10A]

(a)    
(angle subtended by arc at centre = 2 × angle subtended by arc at circumference)

 (vertically opposite angles)



(b)    
(angle subtended by arc at centre = 2 × angle subtended by arc at circumference)

2

 (straight angle)



Extended answer total:\_\_\_\_\_\_/23

TOTAL test results: \_\_\_\_\_ / 61