Multiple choice section

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

Question 1 [9.5]

B

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

Question 2 [9.1]

B

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

Question 3 [9.1]

D



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]

D

SSS. Corresponding sides are equal.

Question 6 [9.2]

C

Triangles I and III satisfy ASA.

Question 7 [9.4]

A

 is incorrect.  
These triangles are similar not congruent.

Question 8 [9.6] [10A]

D

 = 126°

 = 63°

Multiple-choice total marks: 8

Short answer section

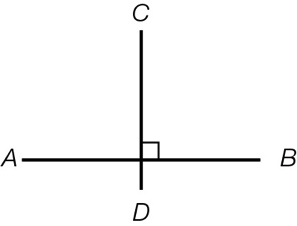
Question 9 2 marks [9.1, 9.2]

(a) An angle of 90° at the point of intersection of two lines means they are perpendicular.

(b) Two equilateral triangles of different side lengths are similar in shape.

Question 10 2 marks [9.2]

A ‘perpendicular bisector’ CD is a line that intersects the midpoint of an interval AB at right angles.



Question 11 4 marks [9.1]

(a) In , and .  
  
In .  
  
All corresponding angles are equal. (AAA)

(b) EF = 3BC  
DF = 3AC   
= 24 cm

Question 12 2 marks [9.2]

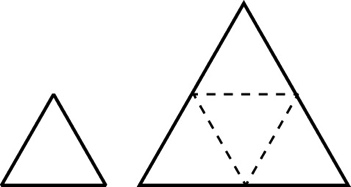
If all corresponding angles are equal, the two triangles are similar but corresponding sides need to be equal to ensure congruency.

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 × 5 = 7.5 m

(b) Dilation factor = =   
New width =  = 3.5 m

(c) Dilation factor =  ×  = 2.5

Question 17 3 marks [9.3]

∠BAE = ∠BCD (base angles of isosceles triangle)

∠AEB = ∠CDB (given)

AB = CB (equilateral triangle)

 (AAS)

Question 18 3 marks [9.2]

|  |  |
| --- | --- |
| (a)   x = 1.67 m | (b) Distance of the tree from the wall = 1.67 – 0.5 = 1.17 m |

Short answer total: 30

Extended answer section

Question 19 5 marks [9.3]

(a)  (angles of equilateral triangles)  
  
  


(b) For   
∠BED = ∠AEC (proved)  
 ED = EC (given)  
 EB = EA (given)  
 (SAS)

(C) BD = AC (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   
DB is a common side   
AB = CB (given)  
AD = CD (given)  
 (SSS)

(b) For   
DE is a common side   
 (corresponding angles of congruent triangles)  
AD = CD (given)  
 (SAS)

(c) For   
AE = EC (corresponding sides of congruent triangles)  
BE is a common side   
AB = CB (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)

  
 (SSS)

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

 (straight angle)



Extended answer total: 23

TOTAL test results: 61