ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

CLASS 8

SUBJECT :Algebra andGeometryWork sheet14 Answer key

Marks:15TRIANGLES

Date:1.3.21

Answer all thefollowing questions(1×15=15)

1) In triangle ABC, if AB=BC and ∠B = 70°, ∠A will be:

a. 70°

b. 110°

c. 55°

d. 130°

Answer: **c**

Explanation: Given,

AB = BC

Hence, ∠A=∠C

And ∠B = 70°

By angle sum property of triangle we know:

∠A+∠B+∠C = 180°

2∠A+∠B=180°

2∠A = 180-∠B = 180-70 = 110°

∠A = 55°

2) For two triangles, if two angles and the included side of one triangle are equal to two angles and the included side of another triangle. Then the congruency rule is:

a. SSS

b. ASA

c. SAS

d. None of the above

Answer: **b**

3) A triangle in which two sides are equal is called:

a. Scalene triangle

b. Equilateral triangle

c. Isosceles triangle

d. None of the above

Answer: **c**

4) The angles opposite to equal sides of a triangle are:

a. Equal

b. Unequal

c. supplementary angles

d. Complementary angles

Answer: **a**

5) If E and F are the midpoints of equal sides AB and AC of a triangle ABC. Then**:**

a. BF=AC

b. BF=AF

c. CE=AB

d. BF = CE

Answer: **d**

Explanation: AB and AC are equal sides.

AB = AC (Given)

$\angle A = \angle A$ (Common angle)

AE = AF (Halves of equal sides)

$\Delta ABF \cong \Delta ACE$ (By SAS rule)

Hence, BF = CE (CPCT)

6) ABC is an isosceles triangle in which altitudes BE and CF are drawn to equal sides AC and AB respectively. Then:

a. BE>CF

b. BE<CF

c. BE=CF

d. None of the above

Answer: **c**

Explanation:

$\angle A = \angle A$ (common arm)

$\angle AEB = \angle AFC$ (Right angles)

AB = AC (Given)

$\therefore \Delta AEB \cong \Delta AFC$

Hence, BE = CF (by CPCT)

7) If ABC and DBC are two isosceles triang**l**es on the same base BC. Then**:**

a. $\angle ABD = \angle ACD$

b. $\angle ABD > \angle ACD$

c. $\angle ABD < \angle ACD$

d. None of the above

Answer: **a**

Explanation: AD = AD (Common arm)

AB = AC (Sides of isosceles triangle)

BD = CD (Sides of isosceles triangle)

So, $\Delta ABD \cong \Delta ACD$.

$\therefore \angle ABD = \angle ACD$ (By CPCT)

8) If ABC is an equilateral triangle, then each angle equals to:

a. 90°

B.180°

c. 120°

d. 60°

Answer: **d**

Explanation: Equilateral triangle has all its sides equal and each angle measures 60°.

AB= BC = AC (All sides are equal)

Hence, $\angle A = \angle B = \angle C$ (Opposite angles of equal sides)

Also, we know that,

$\angle A + \angle B + \angle C = 180°$

$\Rightarrow 3\angle A = 180°$

$\Rightarrow \angle A = 60°$

$\therefore \angle A = \angle B = \angle C = 60°$

9) If AD is an altitude of an isosceles triangle ABC in which AB = AC. Then:

a. BD=CD

b. BD>CD

c. BD<CD

d. None of the above

Answer: **a**

Explanation: In ΔABD and ΔACD,

$\angle ADB = \angle ADC = 90°$

AB = AC (Given)

AD = AD (Common)

$\therefore \Delta ABD \cong \Delta ACD$ (By RHS congruence condition)

BD = CD (By CPCT)

10) In a right triangle, the longest side is:

a. Perpendicular

b. Hypotenuse

c. Base

d. None of the above

Answer: **b**

Explanation: In triangle ABC, right-angled at B.

$\angle B = 90$

By angle sum property, we know:

$\angle A + \angle B + \angle C = 180$

Hence, $\angle A + \angle C = 90$

So, ∠B is the largest angle.

Therefore, the side (hypotenuse) opposite to largest angle will be longest one.

11. Two triangles, A PQR and ADEF are of the same size and shape. What can we conclude about them?

(a) ΔPQR is smaller than ΔDFE.

(b) ΔPQR is larger than ΔDFE.

(c) ΔPQR is congruent to ΔDFE.

(d) ΔPQR is not congruent to ΔDFE.

► (c) ΔPQR is congruent to ΔDFE.

12. Which of the following is not a congruence criterion?

(a) ASA

(b) SAS

(c) SSS

(d) None of these

► (d) None of these

13. ΔABC and ΔPQR are congruent under the correspondence: ABC ↔ RQP, then the part of ΔABC that correspond to ∠P is

(a) ∠A

(b) ∠C

(c) ∠B

(d) None of these

► (b) ∠C

14. In ΔPQR and ΔXYZ, ∠P = 50o, XY = PQ, and XZ = PR. By which property are ΔXYZ and ΔPQR congruent?

(a) S.S.S. property

(b) S.A.S. property

(c) A.S.A. property

(d) R.H.S. property

► (b) S.A.S. property

15. Two students drew a line segment each. What is the condition for them to be congruent?

(a) They should be drawn with a scale.

(b) They should be drawn on the same sheet of paper.

(c) They should have different lengths.

(d) They should have the same length.

► (d) They should have the same length.