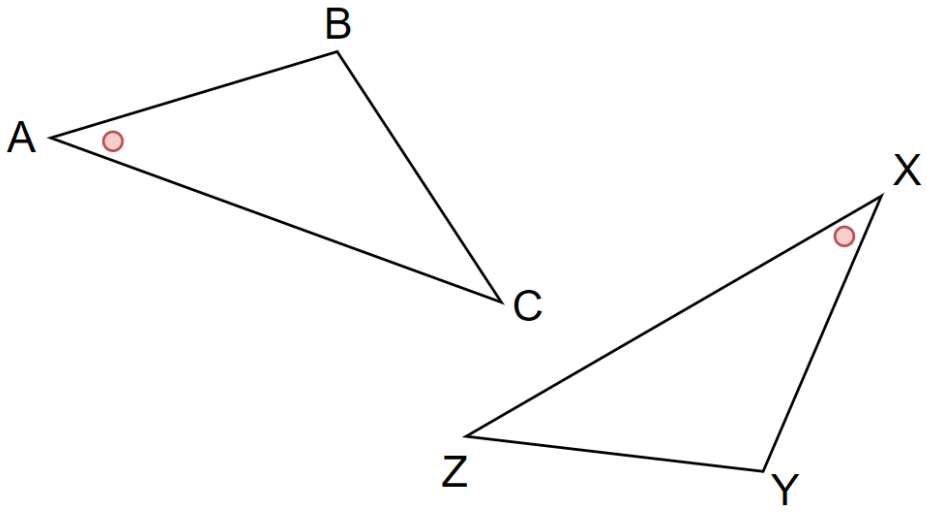
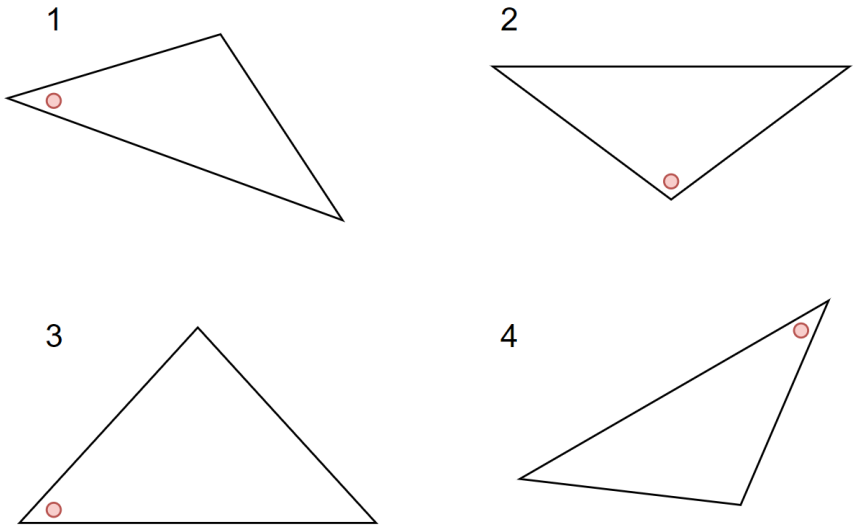
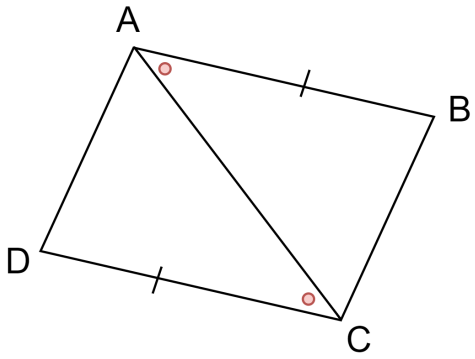
Year 8 Worksheet 8: Congruent figures

Question 1: Answer the following.

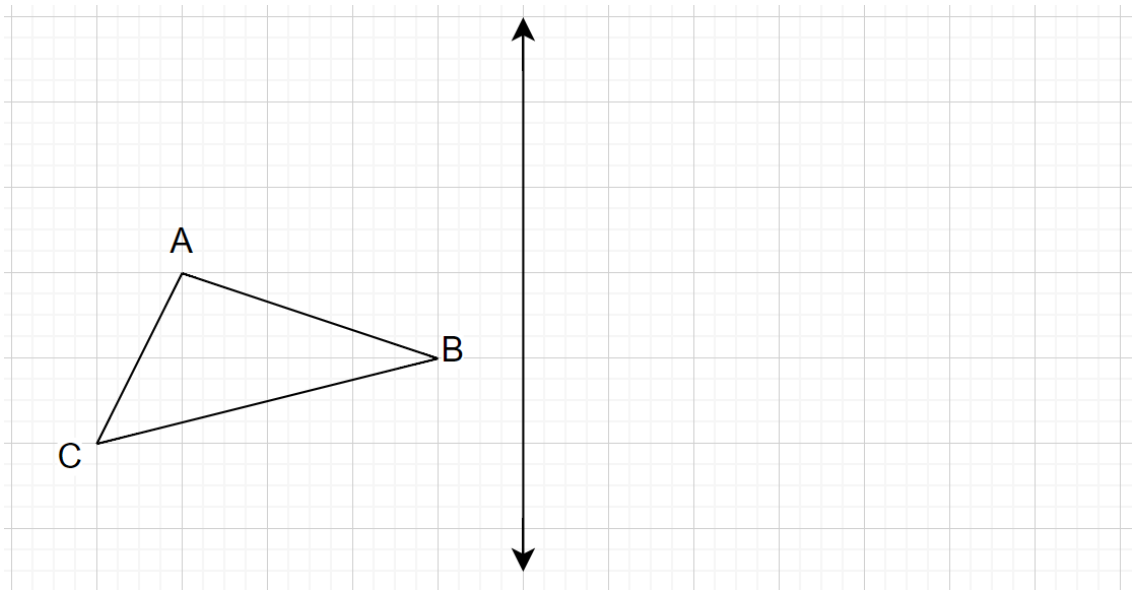
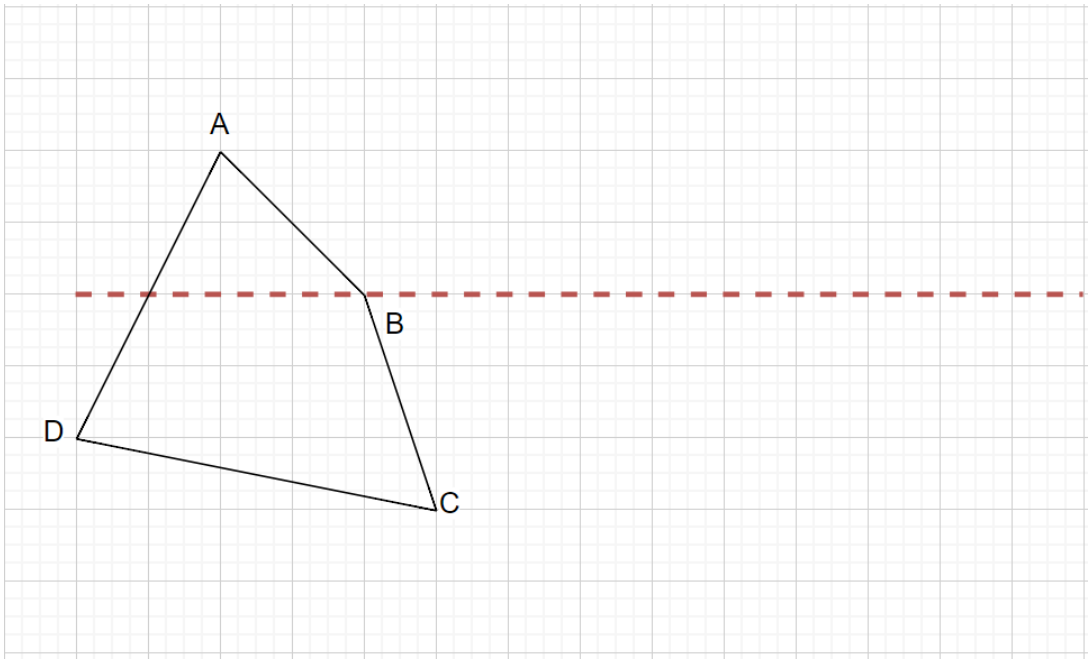
1	What does it mean when two figures are congruent? A. They have the same shape but different sizes. B. They have the same size but different shapes. C. They have both the same shape and size. D. They have no similarities.
2	Which of the following statements is true about congruent triangles? A. They may have different angles. B. They have the same angles but different side lengths. C. They have the same side lengths but different angles. D. They have both the same angles and side lengths.
3	Which transformation preserves congruence? A. Dilation B. Translation C. Reflection D. Rotation
4	Which of the following transformations does not change the size of a figure but may change its orientation? A. Dilation B. Rotation C. Reflection D. Translation

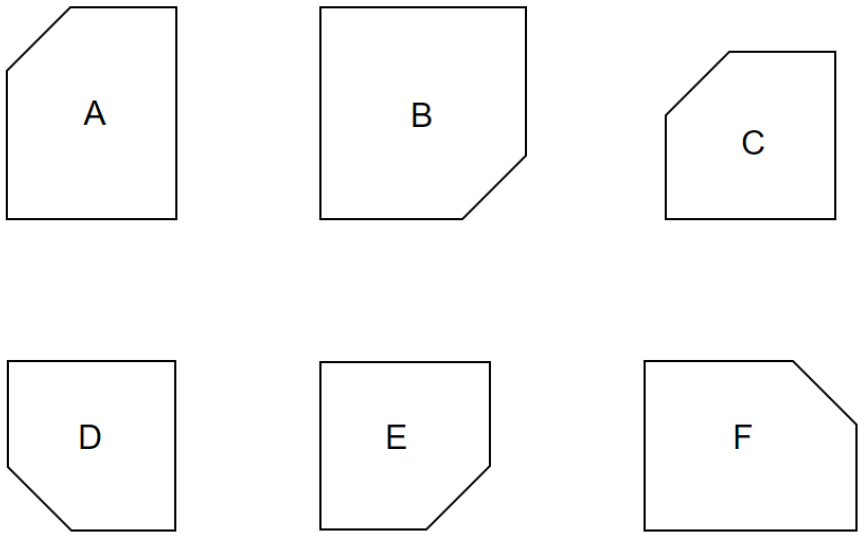
5	For the congruent triangles, which side in△ ABC matches with side XY?  A. AB B. BC C. AC D. ZY
6	In question 5, which angle in△ ABC matches with ∠ X? A. ∠Z B. ∠B C. ∠A D. ∠C
7	In question 5, which angle in△XYZ matches with ∠B? A. ∠X B. ∠Y C. ∠Z D. ∠A

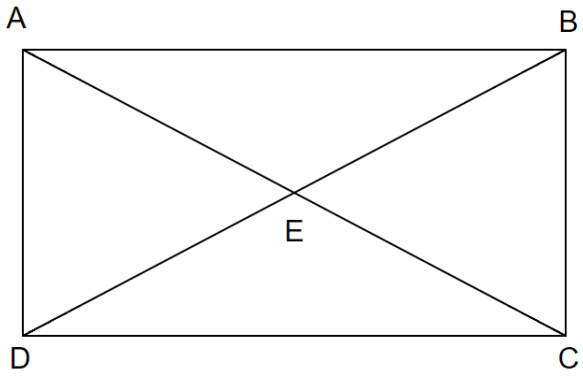
8	Which two triangles are congruent?  A. 1 and 2 B. 2 and 3 C. 1 and 3 D. 4 and 1
9	If △ ABC and △ CDA are congruent, which is the common side?  A. AB B. DC C. AC D. BC
10	In question 9, which angle is equal to ∠DAC? A. ∠BCA B. ∠ADC C. ∠BAC D. ∠ABC

Question 2: Answer the following.

1	Two rectangles, PQRS and WXYZ, are congruent. If the length of PQ is 8 cm and the width is 5 cm, what are the dimensions of the rectangle WXYZ? Draw PQRS and WXYZ.
2	Two triangles, ABC and DEF, are congruent. If the measure of angle A is 45 degrees, what can you conclude about the measure of the congruent angle in DEF? Draw ABC and DEF.
3	A figure has congruent sides and is reflected over a line of symmetry. What type of figure could it be?

4	Translate the triangle ABC 3 units up and 2 units left across the line. 
5	Rotate ABCD 180° about point B, translate 1 unit down and reflect across the dotted line. 

6	Draw a right angled triangle ABC with 2 shorter sides AB = 3 cm and BC = 4 cm. On the same page, draw the congruent triangle of ABC and name it. a. Name all pairs of matching sides. b. Name all pairs of matching angles.
7	Which shapes are congruent? 

8	ABCD is a rectangle.  a. List all the 4 congruent triangle pairs you could find. ● ● ● ● b. Which side is the same length as DE? c. List 5 common congruence tests for triangles. ● ● ● ● ● d. Which congruent triangle test shows that △ABC ≡ △CDA? e. What does this prove about the diagonals of the rectangle?

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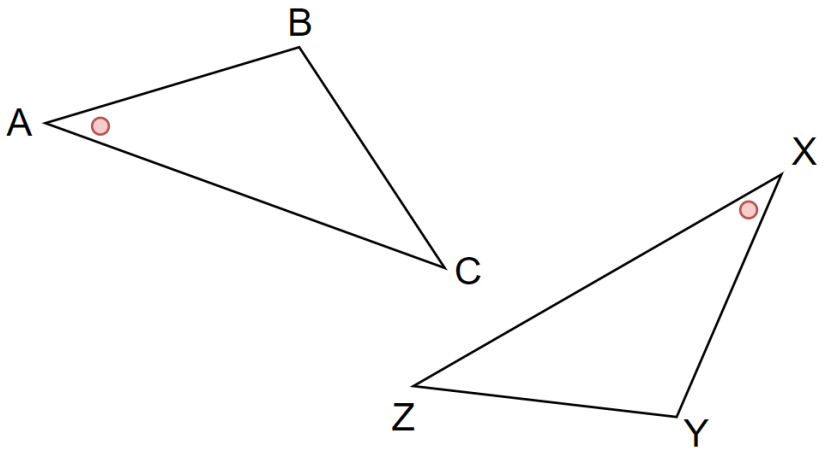
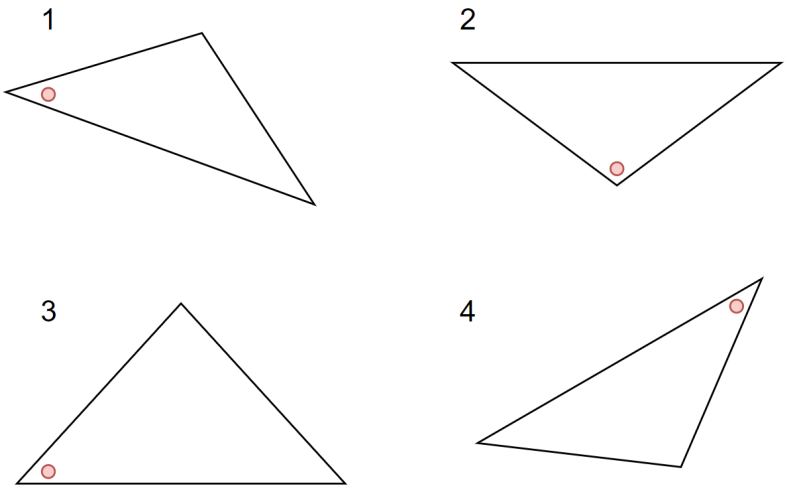
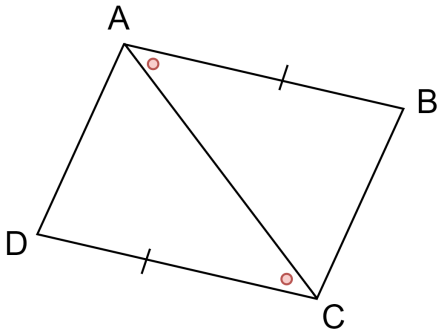
Answer Key

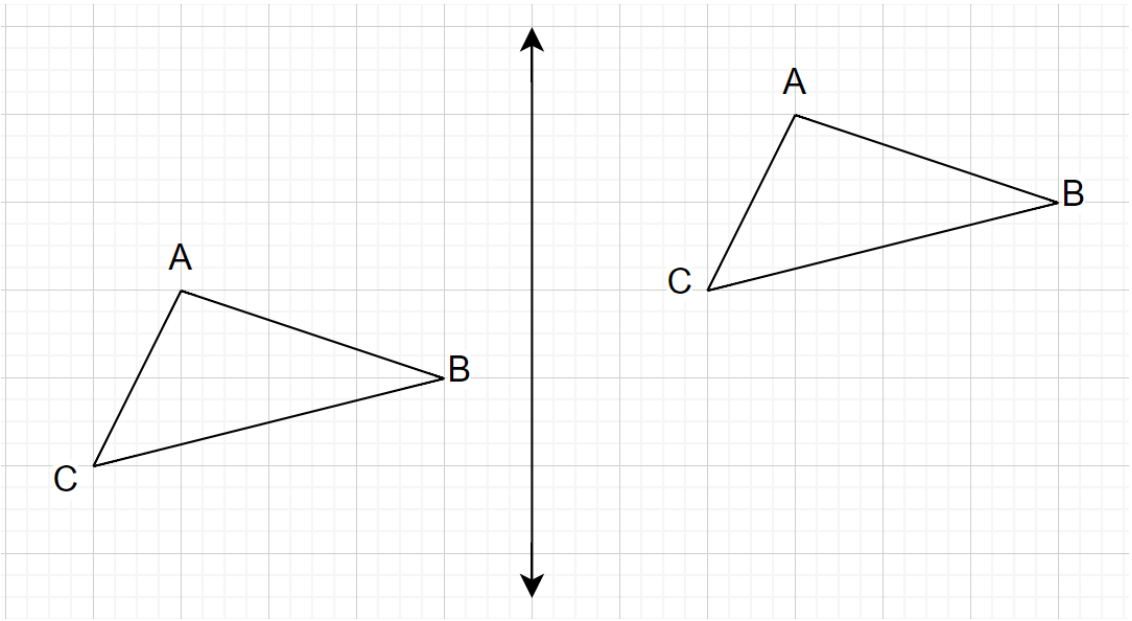
Question 1: Answer the following.

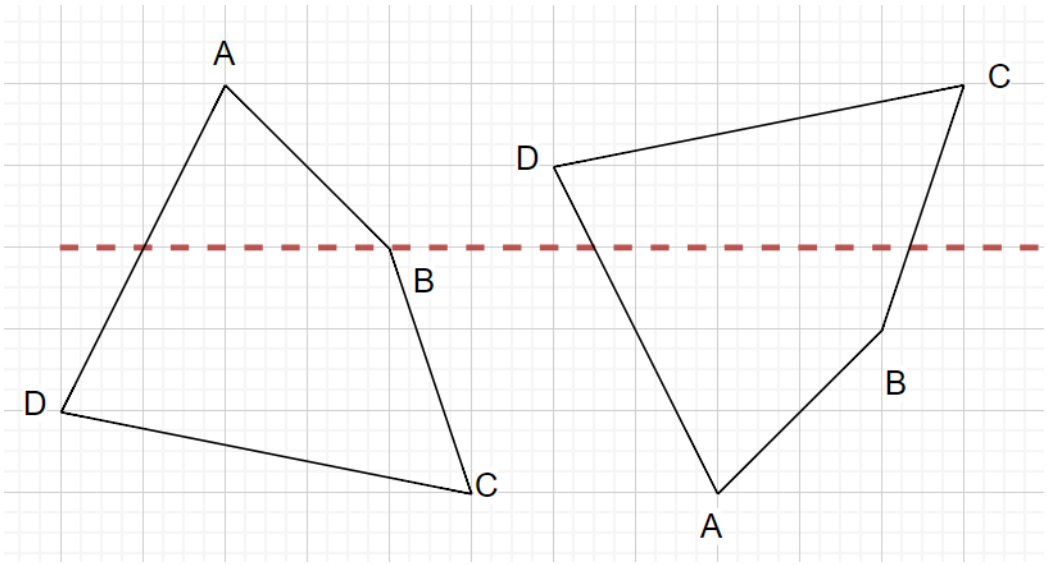
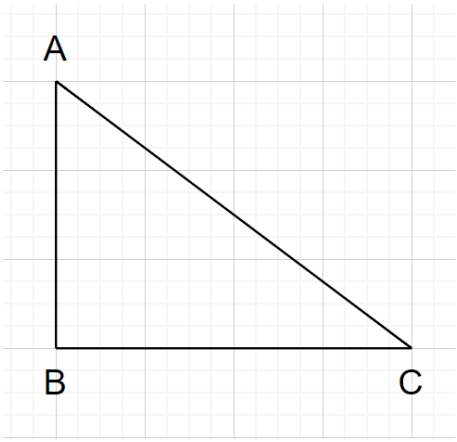
1	What does it mean when two figures are congruent? A. They have the same shape but different sizes. B. They have the same size but different shapes. C. They have both the same shape and size. D. They have no similarities. Answer: C. They have both the same shape and size.
2	Which of the following statements is true about congruent triangles? A. They may have different angles. B. They have the same angles but different side lengths. C. They have the same side lengths but different angles. D. They have both the same angles and side lengths. Answer: D. They have both the same angles and side lengths.
3	Which transformation preserves congruence? A. Dilation B. Translation C. Reflection D. Rotation Answer: B. Translation
4	Which of the following transformations does not change the size of a figure but may change its orientation? A. Dilation B. Rotation C. Reflection D. Translation Answer: B. Rotation

5	For the congruent triangles, which side in△ ABC matches with side XY?  A. AB B. BC C. AC D. ZY Answer: A. AB
6	In question 5, which angle in△ ABC matches with ∠ X? A. ∠Z B. ∠B C. ∠A D. ∠C Answer: C. ∠A
7	In question 5, which angle in△XYZ matches with ∠B? A. ∠X B. ∠Y C. ∠Z D. ∠A Answer: B. ∠Y

8	Which two triangles are congruent?  A. 1 and 2 B. 2 and 3 C. 1 and 3 D. 4 and 1 Answer: D. 4 and 1
9	If△ ABC and△ CDA are congruent, which is the common side? A. AB B. DC C. AC D. BC Answer: C. AC 
10	In question 9, which angle is equal to ∠DAC? A. ∠BCA B. ∠ADC C. ∠BAC D. ∠ABC Answer: A. ∠BCA

Question 2: Answer the following.

1	Two rectangles, PQRS and WXYZ, are congruent. If the length of PQ is 8 cm and the width is 5 cm, what are the dimensions of the rectangle WXYZ? Answer: The dimensions of WXYZ are also 8 cm by 5 cm.
2	Two triangles, ABC and DEF, are congruent. If the measure of angle A is 45 degrees, what can you conclude about the measure of the congruent angle in DEF? Answer: Angle D is also 45 degrees.
3	A figure has congruent sides and is reflected over a line of symmetry. What type of figure could it be? Answer: It could be a parallelogram or any other figure with congruent sides.
4	Translate the triangle ABC 3 units up and 2 units left across the line. 

5	Rotate ABCD 180° about point B, translate 1 unit down and reflect across the dotted line. 
6	Draw a right angled triangle ABC with 2 shorter sides AB = 3 cm and BC = 4 cm. On the same page, draw the congruent triangle of ABC and name it.  a. Name all pairs of matching sides. Teacher to check. b. Name all pairs of matching angles. Teacher to check.

7	Which shapes are congruent? Answer: • A and F • C, D and E
8	ABCD is a rectangle. a. List all the 4 congruent triangle pairs you could find. Teacher to check. Example can be: • ABC, CDA • DAB, CBD • ABE, CDE • AED, BEC b. Which side is the same length as DE? Side AE, EB, EC c. List 5 common congruence tests for triangles. Side-Side-Side (SSS) Side-Angle-Side (SAS) Angle-Side-Angle (ASA) Angle-Angle-Side (AAS) Hypotenuse-Leg (HL) for right triangles only d. Which congruent triangle test shows that △ABC ≡ △CDA? SAS e. What does this prove about the diagonals of the rectangle? The diagonals are the same length