CHAPTER 2

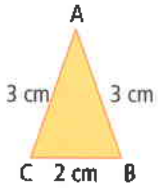
Practice Test

Strand Questions	NSN	MEA 5, 8, 9	GSS 1–11	PA	DMP

Multiple Choice

For questions 1 to 6, select the correct answer.

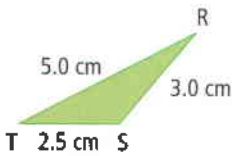
1.



$\triangle ABC$ can be classified as

A an obtuse scalene triangle
B an acute isosceles triangle
C a right scalene triangle
D an acute equilateral triangle

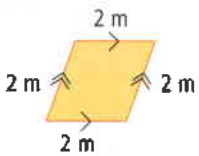
2.



$\triangle RST$ can be classified as

A an obtuse isosceles triangle
B an acute equilateral triangle
C an obtuse scalene triangle
D a right isosceles triangle

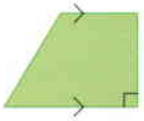
3.



The quadrilateral can be classified as

A a rectangle
B a square
C a trapezoid
D a rhombus

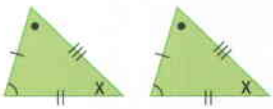
4.



The quadrilateral can be classified as

A a parallelogram
B a square
C a kite
D a trapezoid

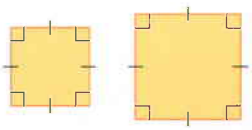
5.



The two shapes are

A isosceles triangles
B congruent triangles
C similar angles
D congruent angles

6.



The two shapes are

A similar triangles
B congruent squares
C similar squares
D congruent rectangles

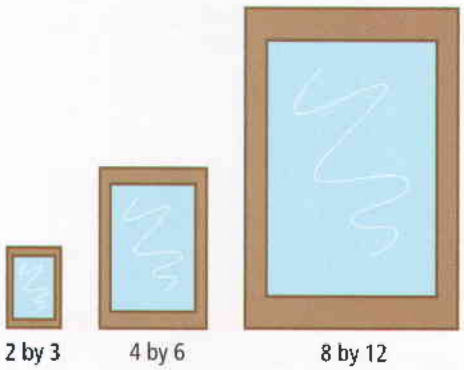
Short Answer

7. Use a ruler and a protractor to draw each triangle. Then, classify the triangle in two ways.

a) In $\triangle XYZ$, $\angle Y$ is a right angle. Sides XY and YZ are each 5 cm.

b) $\triangle ABC$ with AB = 5 cm, BC = 7 cm, and $\angle B = 60°$

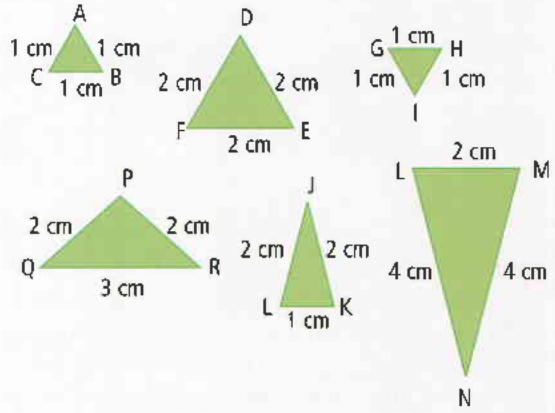
8. Compare the three photo frames shown. Which are similar rectangles? Explain your reasoning.



Extended Response

9. Explain why a right triangle can never be similar to an obtuse triangle. Draw a sketch to help in your explanation.

10. Which triangles are congruent? Which are similar? Explain why.



11. The height of square ABCD is half the height of square EFGH. ABCD has a perimeter of 16 cm. Use a ruler to draw the two quadrilaterals. Label the dimensions of both. Are the figures congruent? similar? Explain.

Chapter Problem Wrap-Up

Patterns that use a variety of shapes are more interesting. Design a pattern for the front of your binder, or for another similar purpose. You may draw it on paper, and then create it using pieces of coloured tissue paper, fabric, wood, or other materials you choose.

Your pattern block should include
- two different quadrilaterals
- two different triangles
- some congruent figures
- some similar figures

Write an e-mail to a friend giving a brief description of your design. List its geometric properties.

Chapter 2

1. **Answer: B** (acute isosceles triangle)
2. **Answer: C** (obtuse scalene triangle)
3. **Answer: D** (a rhombus)
4. **Answer: D** (a trapezoid)
5. **Answer: B** (congruent triangles)
6. **Answer: C** (similar squares)
7. **Ans:**
    a. **Right isosceles triangle** (right angle + two 5cm equal sides)
    b. **Acute scalene triangle** (all angles < 90°, all sides different length: 5cm, 7cm)
8. All **three** frames are similar rectangles: **2×3, 4×6, 8×12** (same ratio **2:3**).
9. **A** right triangle has a **90°** angle, but an obtuse triangle has an angle **greater than 90°**. Similar triangles must have the **same angles**, so they can't be similar.
10. **Congruent: ΔABC and ΔGHI** (both have side lengths 1 cm, 1 cm, 1 cm), **Similar: ΔABC, ΔDFE, and ΔGHI** (all equilateral triangles), **ΔJLK and ΔLMN** (both isosceles with the same side ratio; LMN is a scale-up of JLK)
11. Perimeter of square **ABCD = 16 cm**, so side = **16 ÷ 4 = 4 cm**. ABCD's height is half of EFGH's height ⇒ EFGH side = **8 cm**. **ABCD:** 4 cm × 4 cm **EFGH:** 8 cm × 8 cm Not congruent, but **similar** (all squares are similar).