Master 3.14

Step-by-Step 1

Lesson 1, Question 5

You need pipe cleaners and drinking straws cut to these lengths:

- 1 piece 3 cm long
- 2 pieces 4 cm long
- 3 pieces 5 cm long
- 1 piece 8 cm long
- 1 piece 9 cm long

Step 1 Choose 3 straws with the same length.
Arrange the straws to make an equilateral triangle.
Trace the triangle. Label it “equilateral.”

Step 2 Choose the 2 shortest straws with equal length.
Choose the shortest straw with a different length.
Arrange the straws to make an isosceles triangle.
Trace and label your triangle.

Step 3 Choose 3 straws with different lengths.
Choose the longest straws possible.
Arrange the straws to make a scalene triangle.
Trace and label your triangle.

Step 4 Which straws could not be used together to make a triangle?
Why not?

Name _____ Date _____

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Step-by-Step 2

Lesson 2, Question 4

Step 1 To construct a 80° angle:
Use a ruler.
Draw a horizontal line. This is one arm of the angle.

Step 2 Use a protractor.
Place the middle of the protractor at the left end of the arm you drew in *Step 1*.
Start at the 0° on the arm.
Count around the protractor until you reach the angle you are looking for.
Make a mark at the angle.

Step 3 Draw a line joining the left end of the arm with the mark.
Label the angle with its measure.

Step 4 Repeat *Steps 1* to *3* to make a 30° angle.

Step 5 Repeat *Steps 1* to *3* to make a 100° angle.

Step 6 Repeat *Steps 1* to *3* to make a 10° angle.

Step 7 Repeat *Steps 1* to *3* to make a 180° angle.

Step 8 Look at the angle that measures 180°.

What does this angle look like? _____

How might you name an angle that measures 180°?

_____

Name _____ Date _____

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Step-by-Step 4

Lesson 4, Question 5

Use square dot paper, or a geoboard and geobands.

Step 1 Draw an obtuse angle.
At the end of one arm, draw another obtuse angle.
Join the ends of the arms to make a polygon.
Write the name of the polygon inside it.

Step 2 Draw an acute angle.
At the end of one arm, draw another acute angle.
Join the ends of the arms to make a polygon.
Write the name of the polygon inside it.

Step 3 Draw a right angle.
At one end of the arm, draw another right angle.
Join the ends of the arms to make a polygon.
Write the name of the polygon inside it.

Step 4 Draw an acute angle.
At the end of one arm draw an obtuse angle.
At the end of one arm, draw a right angle.
Join the ends of the arms to make a polygon.
Write the name of the polygon inside it.

Step 5 Look at the instructions for each polygon in the Student Book.
Draw different polygons that match these instructions.

Name _____ Date _____

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Step-by-Step 5

Lesson 5, Question 4

Step 1 Construct triangle GHK.
Use the line segment HK, below left.
Use a protractor. Construct a 45° angle at H.
Use a ruler to mark 46 mm along the arm you drew.
Label the end of this segment G.
Use a ruler to join G to K.

Step 2 For the triangle in *Step 1*:

What is the length of side GK? _____

What is the measure of ∠K? _____

Record the measures on the triangle in *Step 1*.

Step 3 Repeat *Step 1* for line segment HK, above right.
This time, make HG 7 cm long.
Draw a new line segment to connect G to K to complete the triangle.

Step 4 For the triangle in *Step 3*:
What is the new side length of GK? _____
Is it greater than or less than the
length of GK in the triangle in *Step 1*? _____

What is the new measure of ∠K? _____

Is it greater than or less than ∠K for *Step 2*? _____
Record these measures on the triangle.

Name _____ Date _____

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Step-by-Step 6

Lesson 6, Question 5

You will need 2-cm grid paper.
Look at the net for a cube on page 99.

Step 1 Draw the squares again on grid paper, with one square in a different position.

Is this new picture a net? _____
Cut out and fold to check.

Step 2 If it is a net, record the net on another piece of grid paper.

Step 3 Repeat *Steps 1* and *2* for a different square.

Step 4 Repeat *Steps 1* and *2* for the same square but moved to a different position.

Step 5 Use *Steps 1* to *4* to find as many nets as you can.
How do you know the nets are different?

_____

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