Math 10

Lesson 7-4 Answers

**Lesson Questions**

**Question 1**

Solving a triangle means that we solve for the acute angles and the sides of the triangle. In this case we are solving for side KN and for ∠K and ∠N. The strategy I chose is just one variation among many. First, I calculate KN using the Pythagorean equation



Now that I have all three sides of the triangle, I could calculate the angles using various trig functions, but where possible I always choose the solution that does not use a value that I have calculated. Why? If I made a mistake in the first calculation, the mistake will mess up the subsequent calculations.

To find ∠K we use the tangent function.



To find ∠N we either (a) remember that the angles of a triangle add up to 180 or (b) use the tangent function.

∠N = 180 – 90 – 57.5 = 32.5

The side KN = 13.0 cm, ∠N = 32.5o and ∠K = 57.5o.

**Question 2**

∠G + ∠H + ∠J = 180

90 + 39 + ∠J = 180

**∠J = 51o**

 

**Question 3**

For a hexagon the circle is divided into 6 triangular pies. The angle for each pie will be

3

30o

x

h

x



Each pie can be divided into two resulting in an angle of 30o.

Using the sin function Using the cos function

we get we get

 

There are six sides, each with a length of 2x There are 6 pies, each with height h and

base x

 

**Assignment**

1. a) Pythagorean Theorem b) Sine ratio

c) Pythagorean Theorem d) Pythagorean Theorem

2. a) ∠T = 57°, TU = 23.0 cm, VU = 19.2 cm

b) ∠Y = 43°, WY = 8.7 cm, XY = 6.3 cm

c) ZB = 11.3 cm, ∠B = 60.3°, ∠Z = 29.7°

d) ∠E = 61°, CD = 12.0 cm, CE = 6.6 cm

3. 173 ft.

4. a) 68 km b) 31°

5. a) 4° b) 15.0 m

6. a) 31° b) 118°

7. 7.3 cm

8. a) 3 in.2 b) 15 in.3

9. 36 cm

10. 15.6 cm; 11.6 cm2