Assignment 6

1. (a) Calculate the weight of the soil. The specific gravity of the soil is 2.65, and the density is 1.75 kN/m³. The area of the footing is 3.5 m x 3.5 m. The depth of the footing is 1.2 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the load on the soil and the bearing capacity of the soil.

(b) The footing is reinforced with a steel bar of 10 mm diameter. Calculate the amount of steel required for the footing. The yield strength of the steel is 415 MPa. The factor of safety is 1.5. The length of the reinforcement is 3.5 m. The area of the steel bar is 0.000785 m² per meter. Calculate the amount of steel required for the reinforcement.

2. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.

3. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.

4. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.

5. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.

6. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.

7. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.

8. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.

9. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.

10. For the condition detailed in Question 1, calculate the radius of the footing. The bearing capacity of the soil is 200 kPa. The factor of safety is 1.5. The load on the footing is 200 kN. The depth of the footing is 1.2 m. The area of the footing is 3.5 m x 3.5 m. The load on the footing is 200 kN. The factor of safety is 1.5. The bearing capacity of the soil is 200 kPa. Calculate the radius of the footing.