Exam Review for Unit 4

1. What will it cost to pave a rectangular parking lot 220 ft by 85 ft at $1.55 per ft²?

2. At 43 cents a foot, how much will it cost to purchase weather-stripping for the following: 6 windows measuring 4 ft by 6 ft; 8 windows measuring 3 ft by 2 ft; and all sides except the bottom of two doors 3 ft wide by 7 ft high?

3. What is the capacity in gallons of a cylindrical water tank 3 ft in diameter and 8 ft high? (1 ft³ ≈ 7.48 gal.) Round to one decimal place.

4. At a density of 7.7112 g/cm³, find the weight of 1200 hex nuts, each 1.00 cm on a side and 0.50 cm thick with a hole 1.00 cm in diameter. Round to two significant digits.

5. How many quarts of paint will it take to cover a spherical water tank 25 ft in diameter if one quart covers 50 ft²?

6. In a 4-hour percolation test, an 8-ft depth of water seeped out of a square pit 4 ft on a side. The plumbing code says that the soil must be able to absorb 5000 gallons in 24 hours. At this rate, will the soil be up to code?

7. Forest service biologists roped off a circular area of recently burned forest to determine how well the forest was recovering. The circular sample area had a 32-ft radius and contained 220 new seedlings. Calculate the germination rate in seedlings per acre. Round to three significant digits.

8. At $3.75 per square foot, how much will it cost to pave a circular pathway with an O.D. of 20 ft and an I.D. of 12 ft? Use π = 3.14.

9. How many square feet of tile will you need to cover the interior of a swimming pool that is 28 ft wide, 75 ft long, and has a shallow end that is 4 ft in altitude and a deep end that is 12 ft in altitude? (Hint: The tile does not go on the bottom of the pool.) Round to the nearest foot.

10. Find the total surface area of the packaging wrapped around a Toblerone Candy Bar if the candy bar is 10.5 in. long with a triangular base of 5.25 in. in length with a height of 4.5 in.
11. Find the total length of ornamental iron 1½ in. thick needed to bend into this shape. Round to two decimal places. 21.206 28.274

12. How many square yards of drywall are needed for the wall shown in the figure below?

13. What will be the weight of a spherical steel tank of diameter 8 yards when it is full of water? The steel used weighs approximately 127 lb/ft² and water weighs 62.4 lb/ft³. Round to the nearest 10 lb.

14. If angle one is 101°45′24″ and angle two is 25°34′55″, then what would angle three need to be to make these supplementary angles?
**Answers**

1. $28,985
2. $100.62
3. 423.0 gallons
4. 8400 grams
5. 40 quarts
6. Yes, 5745 gal/24 hr
7. 2980 seedling per acre
8. $753.60
9. 1648 ft\(^2\)
10. 188.16 in\(^2\)
11. 58.48 in
12. 71.78 yd\(^2\)
13. 681,480 lbs
14. 127°20′19″