

Word problem involving the rate of filling or emptying a rectangular prism: Worksheet 8.1

Name Date Score

1. A bath tub is in the form of a rectangular prism. Its dimensions are 5ft \times 3ft \times 1.5ft. The bath tub is two-thirds full of water. If the bath tub drains at the rate of 1 cubic foot per minute, how long does it take for all the water to drain?
2. A water tank is the form of a rectangular prism. Its dimensions are 6 ft \times 5ft \times 2.4 ft. The tank is three-fourths full and drains at the rate of 1.2 cubic foot per minute. How long does it take for the tank to drain completely?
3. A water tank, having the shape of a rectangular prism of base 100 square centimeters, is being filled at the rate of 1 liter per minute. How long does it take to fill the tank if its height is 5 meters?
4. A wash basin in the shape of a rectangular prism. Its dimensions are 24 in \times 18 in \times 10 in. It is three-fifth full of water and drains at the rate of 144 cubic inches per minute. How long does it take for the basin to drain completely?
5. A petrol tank in the form a rectangular prism has the dimensions 1 m \times 0.75 m \times 0.6 m. It is 20% full. If the tank fills at the rate of 1 liter per minute, how long does it take to fill up the tank?
6. An aquarium tank in the form of a rectangular prism has the dimensions 48 cm \times 40 cm \times 30 cm. If it is 60% full and fills up at the rate of 2 liters per minute, how long does it take to fill up completely?
7. A rectangular fish tank 60 cm \times 15 cm \times 36 cm is $\frac{1}{3}$ full of water. How long does it take to fill the tank completely, if it fills up at the rate of 3 liters per minute?
8. Carla is cleaning out her fish tank that is 5 feet long, 4 feet wide, and 2 feet deep. It is 50% full of water and drains at the rate of 2 cubic foot per minute. How long does it take to drain completely?
9. A swimming pool is 10m long, 8m wide and 5m deep. It is 70% full of water and drains at the rate of 2 kiloliter per minute. How long does it take to drain the swimming pool completely?
10. A bath tub in the shape of a rectangular prism is 20 feet long, 10 feet wide and 5 feet deep. It is 10% full and fills up at the rate of 5 cubic feet per minute. How long does it take to fill up the tub completely?



Solutions: Worksheet 8.1

1. Time taken to drain the tank = 15 minutes
2. Time taken to drain the tank = 45 minutes
3. Time taken to fill the tank = 50 minutes
4. Time taken to drain the basin = 18 minutes
5. Time taken to fill the petrol tank = 360 minutes
6. Time taken to fill the aquarium = 11.52 minutes
7. Time taken to fill the tank = 7.2 minutes
8. Time taken to drain the tank = 10 minutes
9. Time taken to drain the pool = 140 minutes
10. Time taken to fill up the tub = 180 minutes

