

Unit 8: Putting It All Together

ADVANCED • SET 4

Name: _____ Date: _____

Solve each problem. Show your work on scrap paper, and write each answer in simplest form with the correct units where they are asked for.

1. An aquarium is a rectangular prism 14 cm long, 9 cm wide and 12 cm tall. A solid stone block $5\text{ cm} \times 4\text{ cm} \times 3\text{ cm}$ is dropped inside. Water is then poured in until the aquarium is completely full to the top. How many cubic centimetres of water are in the aquarium?

Answer: _____

3. A community garden is a rectangle with corners at (2, 5), (9, 5), (9, 17) and (2, 17). A square tool shed sits inside it with corners at (4, 7), (6, 7), (6, 9) and (4, 9). All the rest of the garden is grass. How many square units of grass are there?

Answer: _____

5. A roll of ribbon is $8\frac{3}{4}$ m long. Ravi cuts it into pieces that are each $\frac{7}{16}$ m long, with no ribbon left over. How many pieces does he get?

Answer: _____

7. A shipping crate has a rectangular base 15 cm by 8 cm. Its volume is exactly the same as the volume of a cube with edge 12 cm. How tall is the crate?

Answer: _____

9. Work out the value of this expression: $\frac{3}{8} + \frac{5}{6} \times 2.4 - 0.45$

Answer: _____

2. On a coordinate grid, three corners of a rectangular skate park are A(3, 14), B(3, 2) and C(11, 2). The sides of the rectangle run straight across and straight up and down. What are the coordinates of the fourth corner?

Answer: _____

4. At the market, Mira buys 3.8 kg of trail mix at \$6.45 per kg and 2.4 kg of dried mango at \$8.75 per kg. She pays with a \$60 note. How much change does she get?

Answer: _____

6. A water tank holds $4\frac{1}{2}$ litres when full. It is $\frac{2}{3}$ full. Then $\frac{5}{8}$ of the water in the tank is poured out. How many litres are left in the tank? Give your answer as a mixed number.

Answer: _____

8. A shop starts with 48.3 kg of rice. The owner keeps 3.3 kg for the shop and puts all the rest into bags holding 0.75 kg each. How many bags does she fill?

Answer: _____

10. A playground step is built from two rectangular concrete blocks stacked on top of each other. The bottom block is $12\text{ cm} \times 7\text{ cm} \times 5\text{ cm}$. The top block is $6\text{ cm} \times 7\text{ cm} \times 4\text{ cm}$. What is the total volume of concrete in the step?

Answer: _____

11. A drone starts at (2, 3) on a map grid. It flies in a straight line to (2, 11), then straight to (14, 11), then straight to (14, 4). Each grid unit stands for 5 metres. How many metres does the drone fly in all?

Answer: _____

12. A painter has $8\frac{1}{4}$ cans of paint. Each wall he paints uses exactly $\frac{3}{4}$ of a can. How many walls can he paint before the paint runs out?

Answer: _____