

Name: KEY  
 Block: \_\_\_\_\_

## Surface Area – Prisms

1. What is the surface area of the prism?  
810 m<sup>2</sup>

$$S = Ph + 2B$$

$$P = 13 + 5 + 12 = 30 \text{ m}$$

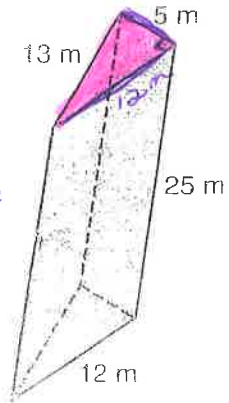
$$h = 25 \text{ m}$$

$$B = \frac{1}{2} \cdot b \cdot h = \frac{1}{2} \cdot 5 \cdot 12 = 30 \text{ m}^2$$

$$S = (30)(25) + 2(30)$$

$$S = 750 + 60$$

$$S = 810 \text{ m}^2$$



2. What is the surface area of the prism?  
1962 mm<sup>2</sup>

$$S = Ph + 2B$$

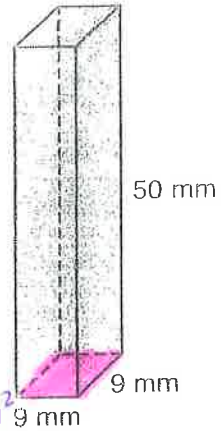
$$P = 9 + 9 + 9 + 9 = 36 \text{ mm}$$

$$h = 50 \text{ mm}$$

$$B = 9 \cdot 9 = 81 \text{ mm}^2$$

$$S = (36)(50) + 2(81)$$

$$S = 1800 + 162 = 1962 \text{ mm}^2$$



3. Paul is painting the living room of his house. He is going to paint all four walls and the ceiling (not the floor). If his living room is 17 feet long, 13 feet wide and has ceilings that are 9 feet high, what is the surface area that he will be painting?

- A. 556 ft<sup>2</sup>
- B. 331 ft<sup>2</sup>
- C. 761 ft<sup>2</sup>
- D. 491 ft<sup>2</sup>



$$P = 2(13) + 2(17) = 60 \text{ ft}$$

$$h = 9 \text{ ft}$$

$$B = 13 \cdot 17 = 221 \text{ ft}^2$$

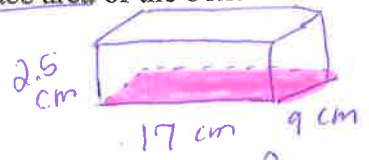
$$S = Ph + B \text{ (only 1 B b/c not painting floor)}$$

$$S = (60)(9) + 221$$

$$S = 540 + 221 = 761 \text{ ft}^2$$

4. A box has a length of 17 cm, a width of 9 cm and a height of 2.5 cm. In square centimeters, what is the surface area of the box?

- A. 218 cm<sup>2</sup>
- B. 57 cm<sup>2</sup>
- C. 382.5 cm<sup>2</sup>
- D. 436 cm<sup>2</sup>



$$S = Ph + 2B$$

$$S = (52)(2.5) + 2(153)$$

$$S = 130 + 306$$

$$S = 436 \text{ cm}^2$$

$$P = 2(17) + 2(9) = 52 \text{ cm}$$

$$h = 2.5 \text{ cm}$$

$$B = 17 \cdot 9 = 153 \text{ cm}^2$$

5. Andrew wants to wrap a box that is 18 inches long, 10 inches wide and 2 inches tall. How many square inches of wrapping paper will he need? Total SA!

- A. 236 in<sup>2</sup>
- B. 472 in<sup>2</sup>
- C. 360 in<sup>2</sup>
- D. 400 in<sup>2</sup>



$$P = 2(18) + 2(10) = 56 \text{ in}$$

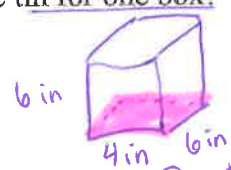
$$h = 2 \text{ in}$$

$$B = 18 \cdot 10 = 180 \text{ in}^2$$

$$S = Ph + 2B$$

$$S = (56)(2) + 2(180) = 112 + 360 = 472 \text{ in}^2$$

6. Abby makes boxes from sheets of tin. The boxes are rectangular prisms measuring 4 inches long, 6 inches wide and 6 inches tall. If tin costs \$.07 per square inch, what is the cost of the tin for one box?



$$P = 2(4) + 2(6) = 20 \text{ in}$$

$$h = 6 \text{ in}$$

$$B = 6 \cdot 4 = 24 \text{ in}^2$$

$$S = Ph + 2B$$

$$S = (20)(6) + 2(24)$$

$$S = 120 + 48 = 168 \text{ in}^2$$

$$\text{Cost} = \$0.07 \cdot 168$$

$$\text{Cost} = \$11.76$$