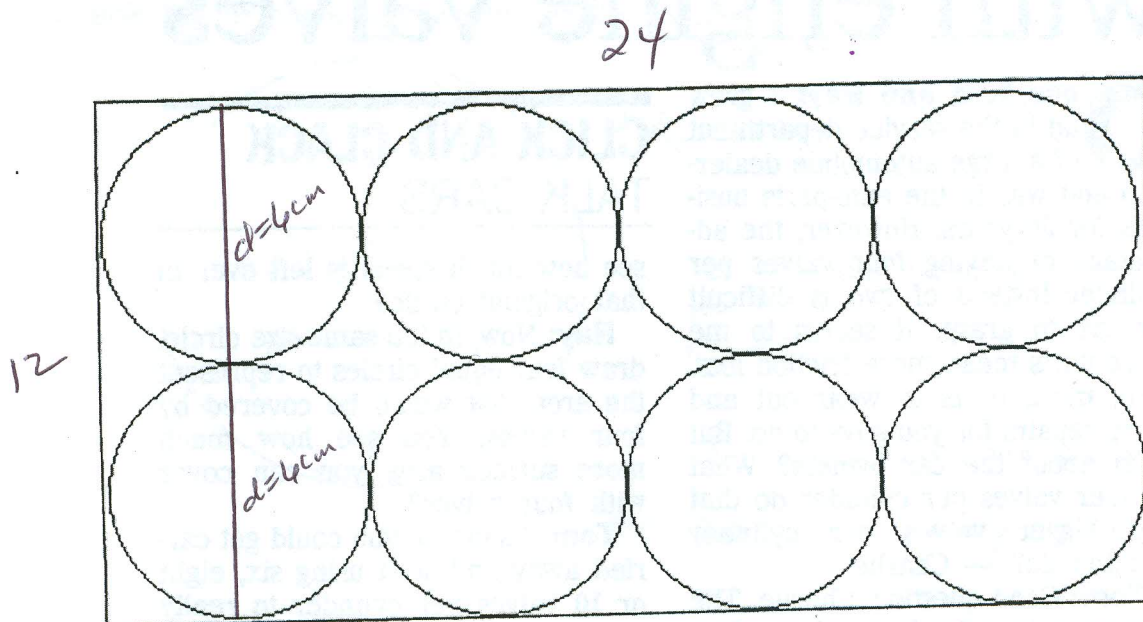


complete



CIRCLES AND WASTE

Eight circular disks are to be cut (stamped) out of a 12 cm by 24 cm piece of metal (aluminum). The remainder of the metal is waste. Use the diagram to answer the questions. SHOW ALL WORK.



1. What is the diameter of each circle? $d = 6 \text{ cm}$
2. What is the radius of each circle? $r = \frac{6}{2} = 3 \text{ cm}$

3. What is the area of each circle?

$$\text{Area of circle} = \pi r^2 = \pi (3^2) = \underline{\hspace{2cm}}$$

4. What is the area of the rectangular piece of aluminum?

$$\text{Area of rectangle} = L \cdot W =$$

5. After the circles are cut from the metal, how much is waste?

$$\text{Area of rectangle} - \text{area of 8 circles} = \text{area of waste}$$

6. What percentage of the metal is wasted?

$$\% = \frac{\text{part}}{\text{whole}} = \frac{\text{waste area}}{\text{rectangular area}}$$