



## JETS Challenge 126 Table Scraps

One way to make cheap tableware is to stamp them in pairs from a continuous roll of metal. One disadvantage to this method is the large amount of scrap (represented by the black area in the graphic) that is generated.

**The Challenge:** Given the dimensions shown, find the percent of initial metal that becomes scrap in this stamping process.



### Total Rectangle

$$A = 180\text{mm} \times (21 + 10 + 55)$$

$$A = 6570\text{mm}^2$$

### Scrap Area

Top Right + Bottom Left + Middle Scrap + Scrap between prongs

$$2 \times (120 \times 5.5) + (60 \times 5.5) + 6 \times (40 \times 3) =$$

$$= 1320 + 330 + 720$$

$$= 2370$$

$$\text{Scrap} = \frac{2370}{6570} = 36.1\%$$

ANSWER: 36.1%

## JETS

Explore... Assess... Experience Engineering!

[www.jets.org](http://www.jets.org)

*JETS Challenge problems are generously provided by Dave Meredith, Associate Professor, Penn State University-Fayette*