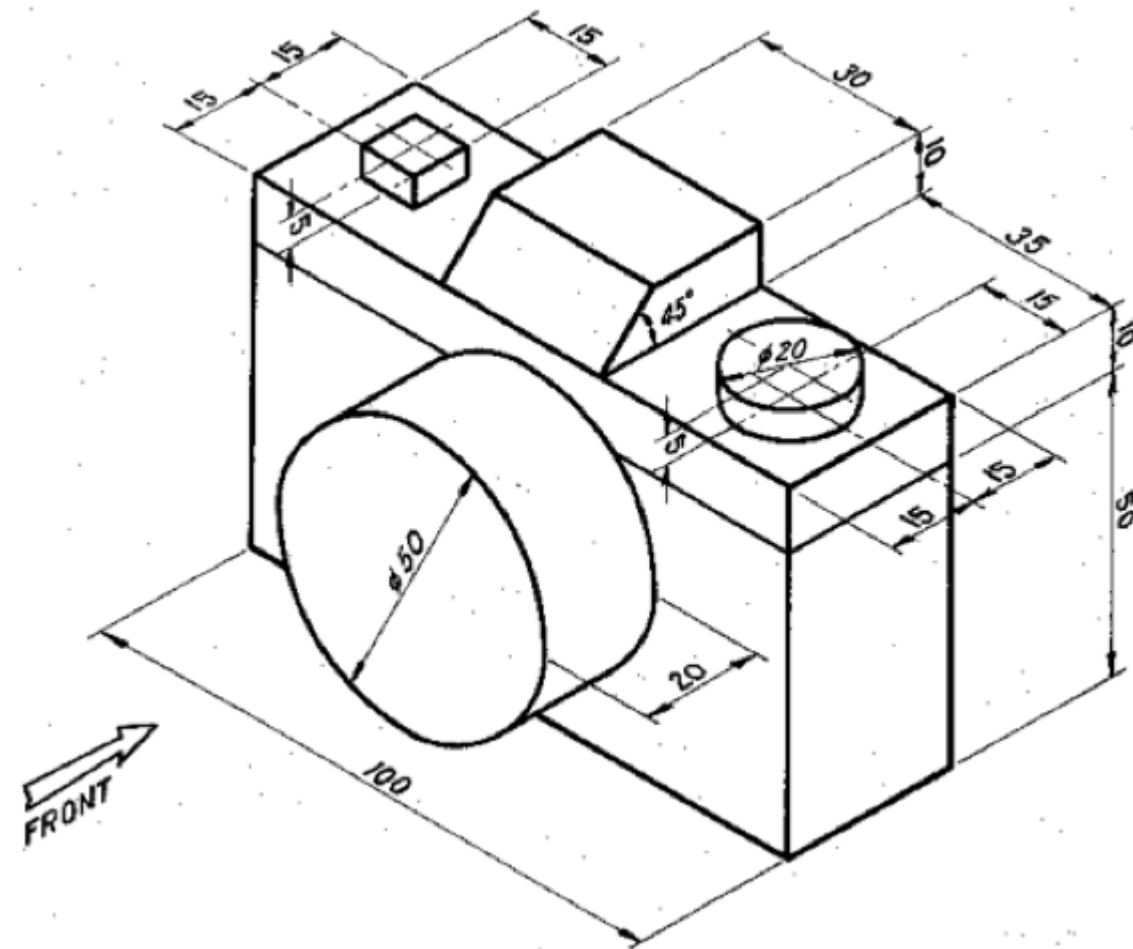


## 2020 NJ TSA MIDDLE SCHOOL DESIGN PROBLEMS

### **CAD Foundations**

Use CAD to produce isometric and 3-view (orthographic) drawings of the camera body illustrated below. Choose an appropriate scale so that you can print the drawings on a single sheet of plain white paper 11" x 17" or smaller. Include a border, title block with the event name (CAD Foundations), ID number, and drawing scale.

Your drawings will be evaluated using the Official Rating Form, page 47 of the Competitive Events Guide.



## **System Control Technology**

You have probably noticed that many identical consumer products are sold in a variety of different packages. Large companies employ packaging engineers to design the systems needed to accomplish this.

MARS, a New Jersey company, is interested in selling a pocket size version of their best-selling product, M&M's. Two billion M&M's are manufactured during each shift at their New Jersey plant, and the company is always looking for new ways to increase sales of this famous product.

Your challenge is to build a model packaging system that fills three (3) 35mm film containers with M&M's, and then moves the filled containers along a conveyor system. Note- you do not have to apply caps to the film containers, since another team has been assigned that responsibility.