

## PLANES

Use the given information to find, if possible, the equation of the plane. For each problem, give your answer in the form  $z = Ax + By + C$ . If the information given doesn't define a plane, state so along with the reason why.

1. Contains the points  $P = (1, 0, 3)$  and  $Q = (0, 2, 4)$ , and intercepts the  $z$ -axis at  $(0, 0, 1)$ .
2. Contains the points  $P = (2, 3, 4)$ ,  $Q = (5, 3, 8)$ , and  $R = (2, 6, 9)$ .
3. Has intercepts  $(0, 0, 5)$ ,  $(4, 0, 0)$ , and  $(0, 10, 0)$ .
4. The slope in the direction of the positive  $x$ -axis is 3, the slope in the direction of the positive  $y$ -axis is -2, and it contains the point  $P = (2, 1, 4)$ .
5. Contains the points  $P = (2, 3, 0)$ ,  $Q = (2, 3, 5)$ , and  $R = (2, 3, 9)$ .