

Advanced Higher Maths
SQA 2017 Paper
Question 15



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- (a) A beam of light passes through the points B(7, 8, 1) and T(-3, -22, 6).
Obtain parametric equations of the line representing the beam of light. 2
- (b) A sheet of metal is represented by a plane containing the points P(2, 1, 9),
Q(1, 2, 7) and R(-3, 7, 1).
Find the Cartesian equation of the plane. 4
- (c) The beam of light passes through a hole in the metal at point H.
Find the coordinates of H. 3
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Answers:

(a) $x = 2\lambda + 7$
 $y = 6\lambda + 8$
 $z = -\lambda + 1$

or

$$x = 2\lambda - 3$$
$$y = 6\lambda - 22$$
$$z = -\lambda + 6$$

or equivalent.

(b) $4x + 2y - z = 1$

(c) $H(3, -4, 3)$