

Partial solutions for 3-15 (odds) 23 25 26 29 31 39 45 71

3. $r(t) = \langle 2 + 3t, 2.4 + 2t, 3.5 - t \rangle$

$$x = 2 + 3t, y = 2.4 + 2t, z = 3.5 - t$$

5. $r(t) = (1 + t)\mathbf{i} + 3t\mathbf{j} + (6 + t)\mathbf{k}$

$$x = 1 + t, y = 3t, z = 6 + t$$

7. $x = 2 + 2t, y = 1 + \frac{1}{2}t, z = -3 - 4t.$

$$\frac{x - 2}{2} = \frac{y - 1}{1/2} = \frac{z + 3}{-4}$$

9. $x = -8 + 11t, y = 1 - 3t, z = 4.$

$$\frac{x + 8}{11} = \frac{y - 1}{-3}, z = 4$$

11. $x = -6 + 2t, y = 2 + 3t, z = 3 + t$

$$\frac{x + 6}{2} = \frac{y - 2}{3} = z - 3$$

13. Parallel because $v_2 = \lambda v_1, \lambda = -5/2.$

15. $\frac{x-1}{-1} = \frac{y+5}{2} = \frac{z-6}{-3}.$

(b): Set $z = 0$ to get $(-1, -1, 0).$

Set $x = 0$ to get $(0, -3, -3).$

Set $y = 0$ to get $(-3/2, 0, -3/2).$

23. $x - 2y + 5z = 0$

25. $x + 4y + z = 4$

29. $6x + 6y + 6z = 11$

31. $x + y + z = 2$

39. $3x - 8y - z = -38$

45. Point: $(-2, 6, 3)$

71. $18/7$