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Group: B20-04   Variant: 4

P4. find the distance between the Parallel

Planes $2x - 2y - z - 3 = 0$, $6x - 6y - 3z - 2 = 0$

Answer:

$$\overline{n_1} = (2, -2, -1) \qquad \overline{n_2} = (6, -6, -3)$$

$$D = \frac{|ax_0 + by_0 + cz_0 + d|}{\sqrt{a^2 + b^2 + c^2}}$$

$$= \frac{|6(4) + -6(2) + -3(1) + (-2)|}{\sqrt{6^2 + (-6)^2 + (-3)^2}}$$

$$= \frac{|24 - 12 - 3 - 2|}{\sqrt{36 + 36 + 9}} = \frac{|7|}{\sqrt{81}}$$

$$= \frac{7}{\sqrt{81}}$$