

Problema: AL0017 - Algebra letterale

Testo [AL0017] [1 ★ 2 ⌚ 1 📖] Trova l'MCD e l'mcm delle seguenti terne di monomi.

(a) $\{15x^5y^4z^6; 10x^3y^2z^4; 5x^2y^4z^3\}; \quad \{12a^4b^3c; 18a^2b^5; 30a^3b^2c^2\}; \quad \{x^2y^2; 3z^3; 5a^4\}$

(b) $\{7a^3b^4c^6; 21a^5b^2c^4; 14a^2b^4c^3\}; \quad \{7x^2y; 14x^3z; 21y^2z^3\}; \quad \{16a^6; 8a^3b^2; 32a^4b^5\}$

(c) $\{6a^3b^4x^6; 12a^5y^2c^4; 18a^2b^4c^3\}; \quad \{-3a^4b; 6a^2b^3; 9a^5b^2\}; \quad \{4xy; 6x^2y^2; 8x^3y^3\}$

(d) $\{2x^2y; 4xy^3; 6x^3y^2\}; \quad \{8x^5; -4x^3y; 12x^2y^4\}; \quad \{9m^2n^3p; 12m^4p^2; 6n^5p^3\}$

(e) $\{a^3b^2; a^2b^5; a^4b\}; \quad \{15a^3bc^2; -25a^2b^3d; 30ab^4c\}; \quad \{10a^5b; 15a^3b^4; -20a^2b^3c\}$

(f) $\{5x^2; 10y^3; 15xy\}; \quad \{20x^3y^4z^5; 30x^5y^2z; 50x^2y^3z^4\}; \quad \{27x^3y; 18xy^2z; 36x^2yz^3\}$

(g) $\{a^2; b^2; c^2\}; \quad \{50x^5y^5; 75x^2y^7; 100x^3y^3\}; \quad \{14a^3x^2; 49a^2y^3; 21ax^4y\}$

(h) $\{11x^2y; 2x^3y^2; 3xy^3\}; \quad \{6a^4b^2c; 15a^3b^3d^2; 9a^2b^5c^3\}; \quad \{9a^4b^2c; 15a^3b^5; 21a^2b^3c^4\}$

Spiegazione L'MCD lo trovi prendendo tra i due monomi i soli fattori comuni, una sola volta, con l'esponente più piccolo. L'mcm lo trovi prendendo, una sola volta, tutti i fattori differenti che compaiono con l'esponente più grande.

Svolgimento Qui di seguito le soluzioni degli esercizi proposti

$$\begin{aligned} \text{(a)} \quad \text{MCD} &= 5x^2y^2z^3 \quad \text{mcm} = 30x^5y^4z^6 \\ \text{MCD} &= 6a^2b^2 \quad \text{mcm} = 180a^4b^5c^2 \\ \text{MCD} &= 1 \quad \text{mcm} = 15a^4x^2y^2z^3. \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad \text{MCD} &= 7a^2b^2c^3 \quad \text{mcm} = 42a^5b^4c^6 \\ \text{MCD} &= 7 \quad \text{mcm} = 42x^3y^2z^3 \\ \text{MCD} &= 8a^3 \quad \text{mcm} = 32a^6b^5. \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad \text{MCD} &= 6a^2 \quad \text{mcm} = 36a^5b^4c^4x^6y^2 \\ \text{MCD} &= 3a^2b \quad \text{mcm} = 18a^5b^3 \\ \text{MCD} &= 2xy \quad \text{mcm} = 24x^3y^3. \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad \text{MCD} &= 2xy \quad \text{mcm} = 12x^3y^3 \\ \text{MCD} &= 4x^2 \quad \text{mcm} = 24x^5y^4 \\ \text{MCD} &= 3p \quad \text{mcm} = 36m^4n^5p^3. \end{aligned}$$

$$\begin{aligned} \text{(e)} \quad \text{MCD} &= a^2b \quad \text{mcm} = a^4b^5 \\ \text{MCD} &= 5ab \quad \text{mcm} = 150a^3b^4c^2d \\ \text{MCD} &= 5a^2b \quad \text{mcm} = 60a^5b^4c. \end{aligned}$$

$$\begin{aligned} \text{(f)} \quad \text{MCD} &= 5 \quad \text{mcm} = 30x^2y^3 \\ \text{MCD} &= 10x^2y^2z \quad \text{mcm} = 300x^5y^4z^5 \\ \text{MCD} &= 9xy \quad \text{mcm} = 108x^3y^2z^3. \end{aligned}$$

$$\begin{aligned} \text{(g)} \quad \text{MCD} &= 1 \quad \text{mcm} = a^2b^2c^2 \\ \text{MCD} &= 25x^2y^3 \quad \text{mcm} = 300x^5y^7 \\ \text{MCD} &= 7a \quad \text{mcm} = 294a^3x^4y^3. \end{aligned}$$

$$\begin{aligned} \text{(h)} \quad \text{MCD} &= xy \quad \text{mcm} = 66x^3y^3 \\ \text{MCD} &= 3a^2b^2 \quad \text{mcm} = 90a^4b^5c^3d^2 \\ \text{MCD} &= 3a^2b^2 \quad \text{mcm} = 315a^4b^5c^4. \end{aligned}$$