VAXA
SOFTWARE

Exercises of Monomials

1) Write the coefficient and the degree of the following monomials:

a) $\sqrt{45}\, x^4\, y^6$

b) $4\, x^2\, z^3$

c) $\dfrac{17}{2}\, x^4\, y^2\, z^2$

d) $\sqrt{60}\, a^5\, b^4$

e) $30\, x^6\, y^2$

f) $\dfrac{5}{3}\, u^6\, v^4\, w^3$

2) Calculate the following expressions:

a) $2\, x\, y^3 + 4\, x^6 + 5\, y^3\, x + x^6$

b) $-2\, x^2 + 6\, x^2 + \dfrac{2}{7}\, x^2$

c) $\dfrac{1}{4}\, x^5\, y^5 + \dfrac{7}{6}\, x^6\, y^3 + 4\, x^5\, y^5 - y^3\, x^6$

d) $-7\, x^5\, y^2 + 7\, x^5\, y^2 + 6\, x^5\, y^2$

e) $6\, a^2\, b^4 - 6\, x^6\, y^5 + a^2\, b^4 + 4\, x^6\, y^5$

f) $\dfrac{7}{4}\, x\, y^2\, z^3 - \dfrac{1}{2}\, z^3\, y^2\, x + \dfrac{4}{3}\, x\, y^2\, z^3$

3) Calculate these multiplications involving monomials:

a) $\left(5\, z^3\, y^4\, x^3\right)\cdot\left(3\, x^2\, y^2\right)$

b) $\left(\dfrac{-4}{3}\, x\right)\cdot\left(2\, x^3\, y^5\right)$

c) $\left(9\, x^2\, y^5\right)\cdot\left(8\, y\, z^4\right)$

d) $\left(7\, x^4\, y^2\right)\cdot\left(4\, x^5\, y^5\, z^2\right)$

e) $\left(5\, a\, b^6\right)\cdot\left(10\, a^6\, b^2\right)$

f) $\left(8\, x^2\right)\cdot\left(\dfrac{2}{7}\, z^2\, y^3\, x^3\right)$

4) Calculate the following expressions:

a) $\left(6\, u^6\, v^5\, w^4\right) : \left(3\, u^5\, v^3\, w^4\right)$

b) $\left(40\, z^4\, y^4\, x^4\right) : \left(5\, x^3\right)$

c) $\dfrac{88\, x^{10}\, y^6}{11\, x^4\, y}$

d) $\dfrac{-3\, z^5\, y^5\, x^5}{-\, x\, y^2}$

e) $\left(-18\, x^{10}\, y^7\, z^7\right) : \left(6\, z^3\, y^4\, x^5\right)$

f) $\left(-18\, a^9\, b^3\right) : \left(-6\, a^4\, b^2\right)$

5) Simplify these powers involving monomials:

a) $(-5\, x\, y^5\, z^2)^3$

b) $(5\, w^4\, v^4\, u^5)^3$

c) $(2\, x^5)^4$

d) $(2\, x^5\, y^5\, z^4)^6$

e) $\left(\dfrac{1}{3}\, y\, x^2\right)^2$

f) $(7\, x^3)^2$

Exercises of Monomials

Answers:

1)

a) *Coefficient* $\sqrt{45}$, *degree* 10

b) *Coefficient* 4, *degree* 5

c) *Coefficient* $\dfrac{17}{2}$, *degree* 8

d) *Coefficient* $\sqrt{60}$, *degree* 9

e) *Coefficient* 30, *degree* 8

f) *Coefficient* $\dfrac{5}{3}$, *degree* 13

2)

a) $7\,x\,y^3 + 5\,x^6$

b) $\dfrac{30}{7}\,x^2$

c) $\dfrac{17}{4}\,x^5\,y^5 + \dfrac{1}{6}\,x^6\,y^3$

d) $6\,x^5\,y^2$

e) $7\,a^2\,b^4 - 2\,x^6\,y^5$

f) $\dfrac{31}{12}\,x\,y^2\,z^3$

3)

a) $15\,x^5\,y^6\,z^3$

b) $\dfrac{-8}{3}\,x^4\,y^5$

c) $72\,x^2\,y^6\,z^4$

d) $28\,x^9\,y^7\,z^2$

e) $50\,a^7\,b^8$

f) $\dfrac{16}{7}\,x^5\,y^3\,z^2$

4)

a) $2\,u\,v^2$

b) $8\,x\,y^4\,z^4$

c) $8\,x^6\,y^5$

d) $3\,x^4\,y^3\,z^5$

e) $-3\,x^5\,y^3\,z^4$

f) $3\,a^5\,b$

5)

a) $-125\,x^3\,y^{15}\,z^6$

b) $125\,u^{15}\,v^{12}\,w^{12}$

c) $16\,x^{20}$

d) $64\,x^{30}\,y^{30}\,z^{24}$

e) $\dfrac{1}{9}\,x^4\,y^2$

f) $49\,x^6$