

Točke: _____ / 49

Procenti: _____

1. Zmnoži in poenostavi!

7

a) $-3x^2y^4 \cdot 2x^3y^2 = -6x^5y^6$

b) $\frac{4}{5}a^3 \cdot \left(-\frac{15}{22}\right)a^3b = -\frac{4 \cdot 15 \cdot 3 \cdot 2}{5 \cdot 22 \cdot 1 \cdot 11}a^6b = -\frac{6}{11}a^6b$

c) $0,7a^6 \cdot (-5ab^2) = -3,5a^6b^2$

d) $-7x \cdot (6x + 2) = -42x^2 - 14x$

e) $(a + 6)(2a - 4) = 2a^2 - 4a + 12a - 24 = 2a^2 + 8a - 24$

f) $(4x + 4)(2x + 1) = 8x^2 + 4x + 8x + 4 = 8x^2 + 12x + 4$

g) $\left(\frac{2}{3}x - 5\right)\left(-\frac{1}{2}x - 4\right) = -\frac{2 \cdot 1 \cdot 1}{3 \cdot 2 \cdot 1}x^2 - \frac{4 \cdot 2}{3}x + \frac{5 \cdot 1}{2}x + 20 =$
 $= -\frac{1}{3}x^2 - \frac{8}{3}x + \frac{5}{2}x + 20 = -\frac{1}{3}x^2 - \frac{16}{6}x + \frac{15}{6}x + 20 =$

2. Izpostavi največji skupni faktor!

4

$12ab - 12ac = 12a(b - c)$

$32x^4y^2 - 24x^2y = 8x^2y(4x^2y - 3)$

$15x^4y^2 + 10x^5y^3 = 5x^4y^2(3 + 2xy)$

$4ab^2 - 12a^2b^5 = 4ab^2(1 - 3ab^3)$

$= -\frac{1}{3}x^2 - \frac{1}{6}x + 20$

3. Poenostavi izraze.

3

a) $(-4x + 7) + 8x^2 - (7x^2 + 5x - 19) =$

$= \underline{-4x + 7} + \underline{8x^2} - \underline{7x^2} - \underline{5x} + \underline{19} =$

$= \underline{\underline{x^2 - 9x + 26}}$

3

$$b) \quad 4y(x-5y) + (6x-y)(x-6y) =$$

$$= 4xy - 20y^2 + 6x^2 - 36xy - 1xy + 6y^2 =$$

$$= \underline{\underline{6x^2 - 33xy - 14y^2}}$$

5

$$c) \quad -4(a+2) - 4(3a+1)(3a-1) - (4a-4) \cdot 3 =$$

$$= -4a - 8 - 4(9a^2 - 3a + 3a - 1) - (12a - 12) =$$

$$= \underline{\underline{-4a - 8 - 36a^2 + 4 - 12a + 12}}$$

$$= \underline{\underline{-36a^2 - 16a + 8}}$$

5

$$č) \quad 5x - (12 - 8x)(-3) - (2x - 7) + (4 - 3x^2 - 6x) =$$

$$= 5x - (-36 + 24x) - 2x + 7 + 4 - 3x^2 - 6x =$$

$$= \underline{\underline{5x + 36 - 24x - 2x + 7 + 4 - 3x^2 - 6x}}$$

$$= \underline{\underline{-3x^2 - 27x + 47}}$$

4. Poenostavi izraz in izračunaj vrednost za :

4

$$(-5 + 4x)(2 - x) - 3(x + 4) =$$

$$\text{za } x = -\frac{1}{4}$$

$$= \underline{-10} + \underline{5x} + \underline{8x} - \underline{4x^2} - \underline{3x} - \underline{12} =$$

$$= \underline{-4x^2 + 10x - 22} =$$

$$= -4 \cdot \left(-\frac{1}{4}\right)^2 + 10 \cdot \left(-\frac{1}{4}\right) - 22 =$$

$$= -4 \cdot \frac{1}{16} + \left(-\frac{10 \cdot 1,5}{1 \cdot 4 \cdot 2}\right) - 22 =$$

$$= -\frac{4 \cdot 1}{16 \cdot 4} - \frac{5}{2} - 22 = -\frac{1}{4} - \frac{10}{4} - 22 = -\frac{11}{4} - 22 =$$

$$= -2\frac{3}{4} - 22 = \underline{\underline{-24\frac{3}{4}}}$$

3

5. Zapiši izraz in ga poenostavi:

Od kvadrata vsote števil $6x$ in 5 odštej produkt vsote in razlike istih dveh števil.

$$(6x + 5)^2 - (6x + 5)(6x - 5) =$$

$$= (6x + 5)(6x + 5) - (36x^2 - \cancel{30x} + \cancel{30x} - 25) =$$

$$= 36x^2 + \underline{30x} + \underline{30x} + 25 - (36x^2 - 25) =$$

$$= \cancel{36x^2} + 60x + 25 - \cancel{36x^2} + 25 =$$

$$= \underline{\underline{60x + 50}}$$

4

6. Izračunaj:

a) $76,34 - 96,9 = \underline{\underline{-20,56}}$

b) $3\frac{1}{4} - 5 = \underline{\underline{-1\frac{3}{4}}}$

c) $3\frac{5}{6} - 12\frac{3}{8} = 3\frac{20}{24} - 12\frac{9}{24} = 3\frac{20}{24} - 11\frac{33}{24} = \underline{\underline{-8\frac{13}{24}}}$

d) $-0,3 \cdot \underbrace{0,004 \cdot 10^3}_{1000} = -0,3 \cdot 4 = \underline{\underline{-1,2}}$

$$\begin{array}{r} 96,90 \\ - 76,34 \\ \hline 20,56 \end{array}$$

$$\boxed{3} \quad e) \quad 2\frac{2}{3} \cdot (-5\frac{1}{4}) = - \frac{\cancel{8} \cdot \cancel{21} \cdot 2 \cdot 7}{\cancel{3} \cdot \cancel{4} \cdot 1 \cdot 1} = \underline{\underline{-14}}$$

$$f) \quad 714 : (-4) = \underline{\underline{-178,5}}$$

$$g) \quad (-3\frac{3}{4}) : (-5) =$$

$$= + \frac{\cancel{15} \cdot 1 \cdot 3}{4 \cdot \cancel{5} \cdot 1} = \underline{\underline{\frac{3}{4}}}$$

$$714 : 4 = 178,5$$

$$\begin{array}{r} 31 \\ 34 \\ 20 \end{array}$$

$$\boxed{3} \quad h) \quad (-32) : (-4,5 + 2,9) - 20 =$$

$$= (-32) : (-1,6) - 20 =$$

$$= +20 - 20 =$$

$$= \underline{\underline{0}}$$

$$\begin{array}{r} 4,5 \\ -2,9 \\ \hline 1,6 \end{array}$$

$$320 : 16 = 20$$

$$i) \quad (5\frac{2}{3} - 8\frac{1}{4}) \cdot 12 - (4,5 - 8\frac{2}{3}) =$$

$$\boxed{5} \quad = (5\frac{8}{12} - 8\frac{3}{12}) \cdot 12 - (4\frac{1}{2} - 8\frac{2}{3}) =$$

$$= (5\frac{8}{12} - 7\frac{15}{12}) \cdot 12 - (4\frac{3}{6} - 8\frac{4}{6}) =$$

$$= (-2\frac{7}{12}) \cdot 12 - (-4\frac{1}{6}) =$$

$$= - \frac{31 \cdot 12 \cdot 1}{12 \cdot 1 \cdot 1} + 4\frac{1}{6} =$$

$$30\frac{6}{6} \quad = -31 + 4\frac{1}{6} =$$

$$= \underline{\underline{-26\frac{5}{6}}}$$