Priprema za pismeni iz matematike

1. Izvršiti naznačene operacije I ispitajte oblast definisanosti:

$$a)\ \frac{4x}{x+1}+\frac{6}{x-1}=\frac{4x\cdot(x-1)+6\cdot(x+1)}{(x+1)\cdot(x-1)}=\frac{4x^2-4x+6x+6}{x^2-1^2}$$
$$=\frac{4x^2+2x+6}{x^2-1}$$

$$b)\ \frac{2}{y+3}-\frac{3y^2}{y-1}=\cdots$$

$$c)\ \frac{a-2}{a+6}\cdot\frac{a+3}{a}=\frac{(a-2)\cdot(a+3)}{(a+6)\cdot a}=\frac{a^2+3a-2a+6}{a^2+6a}$$
$$=\frac{a^2+a+6}{a^2+6a}$$

$$d)\ \frac{x+1}{x^2}:\frac{12}{3x-1}\cdots$$

2. Izračunaj:

$$100x^4-49y^6=10^2\cdot(x^2)^2-7^2\cdot(y^3)^2=$$
$$=(10x^2)^2-(7y^3)^2=$$
$$=(10x^2-7y^3)\cdot(10x^2-7y^3)$$

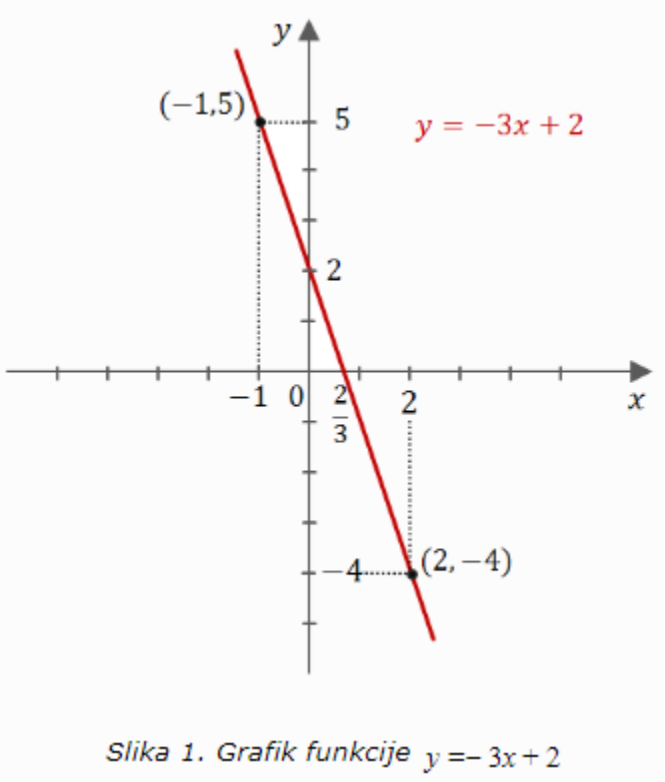
$$x^4-y^4=(x^2)^2-(y^2)^2=$$
$$=(x^2-y^2)\cdot(x^2+y^2)=$$
$$=(x-y)\cdot(x+y)\cdot(x^2+y^2)$$

3. $a)\ (3y+7x)^2 = (3y)^2 + 2\cdot 3y\cdot 7x + (7x)^2$

$= 9y^2 + 42xy + 49x^2$

b) $(5a-3y)^3 =$...

4. Nacrtati I ispitati monotonost funkcije y=-3x+2



Slika 1. Grafik funkcije $y = -3x + 2$