

6. Koristimo pravilo:  $(-a)^2 = a^2$  (opisanom u zadatku 4. pod II način) i pravilo:  $a^2 = a \cdot a$

$$1) \underbrace{\left(-\frac{1}{3}\right)^2}_{(-a)^2 = a^2} = \left(\frac{1}{3}\right)^2 = \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{9}$$

$$2) \left(-\frac{1}{5}\right)^2 = \left(\frac{1}{5}\right)^2 = \frac{1}{5} \cdot \frac{1}{5} = \frac{1}{25}$$

$$3) \left(-\frac{5}{1}\right)^2 = (-5)^2 = 5^2 = 5 \cdot 5 = 25 \quad \text{objašnjenje:} \quad \underbrace{\left(-\frac{5}{1}\right)^2}_{\frac{a}{1} = a} = \overbrace{(-5)^2}^{(-a)^2 = a^2} = 5^2 = 5 \cdot 5 = 25$$

$$4) \left(-\frac{7}{1}\right)^2 = (-7)^2 = 7^2 = 7 \cdot 7 = 49$$

$$5) \left(-\frac{2}{7}\right)^2 = \left(\frac{2}{7}\right)^2 = \frac{2}{7} \cdot \frac{2}{7} = \frac{4}{49}$$

II način: postoji pravilo koje kaže:  $\left(\frac{a}{b}\right)^2 = \frac{a^2}{b^2}$  pa po njemu možemo riješiti ovaj zadatak:

$$\left(-\frac{2}{7}\right)^2 = \left(\frac{2}{7}\right)^2 = \frac{2^2}{7^2} = \frac{2 \cdot 2}{7 \cdot 7} = \frac{4}{49}$$

$$6) \left(-\frac{9}{5}\right)^2 = \left(\frac{9}{5}\right)^2 = \frac{9}{5} \cdot \frac{9}{5} = \frac{81}{25} \quad \text{ili nastavimo dalje:} \quad = \frac{81}{25} = \frac{75+6}{25} = 3 \frac{6}{25}$$

II način po pravilu:  $\left(\frac{a}{b}\right)^2 = \frac{a^2}{b^2}$

$$\underbrace{\left(-\frac{9}{5}\right)^2}_{(-a)^2 = a^2} = \left(\frac{9}{5}\right)^2 = \frac{9^2}{5^2} = \frac{9 \cdot 9}{5 \cdot 5} = \frac{81}{25}$$

$$7) \left(-\frac{11}{3}\right)^2 = \left(\frac{11}{3}\right)^2 = \frac{11}{3} \cdot \frac{11}{3} = \frac{121}{9} \quad \text{II način:} \quad \left(-\frac{11}{3}\right)^2 = \left(\frac{11}{3}\right)^2 = \frac{11^2}{3^2} = \frac{11 \cdot 11}{3 \cdot 3} = \frac{121}{9}$$

$$8) \left(-\frac{25}{13}\right)^2 = \left(\frac{25}{13}\right)^2 = \frac{25}{13} \cdot \frac{25}{13} = \frac{625}{169}$$

$$\text{II način:} \quad \left(-\frac{25}{13}\right)^2 = \left(\frac{25}{13}\right)^2 = \frac{25^2}{13^2} = \frac{25 \cdot 25}{13 \cdot 13} = \frac{625}{169}$$

6. Koristimo pravilo:  $(-a)^2 = a^2$  i pravilo:  $a^2 = a \cdot a$

$$9) -\left(-\frac{3}{5}\right)^2 = -\left(\frac{3}{5}\right)^2 = -\left(\frac{3 \cdot 3}{5 \cdot 5}\right) = -\left(\frac{9}{25}\right) = -\frac{9}{25}$$

ili

$$-\left(-\frac{3}{5}\right)^2 = -1 \cdot \left(-\frac{3}{5}\right)^2 = -1 \cdot \left(\frac{3}{5}\right)^2 = -1 \cdot \left(\frac{3 \cdot 3}{5 \cdot 5}\right) = -1 \cdot \frac{9}{25} = -\frac{9}{25}$$

↓ tu možemo kvadrirati i na II način

$$\left(\frac{3}{5}\right)^2 = \frac{3^2}{5^2} = \frac{3 \cdot 3}{5 \cdot 5} = \frac{9}{25}$$

$$10) -\left(-\frac{9}{13}\right)^2 = -\left(\frac{9}{13}\right)^2 = -\left(\frac{9 \cdot 9}{13 \cdot 13}\right) = -\frac{81}{169} = -\frac{81}{169}$$

ili

$$-\left(-\frac{9}{13}\right)^2 = -1 \cdot \left(-\frac{9}{13}\right)^2 = -1 \cdot \left(\frac{9}{13}\right)^2 = -1 \cdot \left(\frac{9 \cdot 9}{13 \cdot 13}\right) = -1 \cdot \frac{81}{169} = -\frac{81}{169}$$

↓ tu možemo kvadrirati i na II način

$$\left(\frac{9}{13}\right)^2 = \frac{9^2}{13^2} = \frac{9 \cdot 9}{13 \cdot 13} = \frac{81}{169}$$

$$11) -\left(-\frac{14}{15}\right)^2 = -\left(\frac{14}{15}\right)^2 = -\left(\frac{14 \cdot 14}{15 \cdot 15}\right) = -\left(\frac{196}{225}\right) = -\frac{196}{225}$$

ili

$$-\left(-\frac{14}{15}\right)^2 = -1 \cdot \left(-\frac{14}{15}\right)^2 = -1 \cdot \left(\frac{14}{15}\right)^2 = -1 \cdot \left(\frac{14 \cdot 14}{15 \cdot 15}\right) = -\left(\frac{196}{225}\right) = -\frac{196}{225}$$

↓ tu možemo kvadrirati i na II način

$$\left(\frac{14}{15}\right)^2 = \frac{14^2}{15^2} = \frac{14 \cdot 14}{15 \cdot 15} = \frac{196}{225}$$

$$12) -\left(-\frac{12}{7}\right)^2 = -\left(\frac{12}{7}\right)^2 = -\left(\frac{12 \cdot 12}{7 \cdot 7}\right) = -\left(\frac{144}{49}\right) = -\frac{144}{49}$$

ili

$$-\left(-\frac{12}{7}\right)^2 = -1 \cdot \left(-\frac{12}{7}\right)^2 = -1 \cdot \left(\frac{12}{7}\right)^2 = -1 \cdot \left(\frac{12 \cdot 12}{7 \cdot 7}\right) = -1 \cdot \frac{144}{49} = -\frac{144}{49}$$

↓ tu možemo kvadrirati i na II način

$$\left(\frac{12}{7}\right)^2 = \frac{12 \cdot 12}{7 \cdot 7} = \frac{144}{49}$$

6. Koristimo pravilo:  $a^2 = a \cdot a$ 

U ovim zadacima od 13) -do- 16) imamo:  $\boxed{-a^2 = -1 \cdot a^2}$

$$13) -\left(\frac{4}{5}\right)^2 = -1 \cdot \left(\frac{4}{5}\right)^2 = -1 \cdot \frac{4}{5} \cdot \frac{4}{5} = -1 \cdot \frac{16}{25} = -\frac{16}{25}$$

ili

$$-\left(\frac{4}{5}\right)^2 = -1 \cdot \left(\frac{4}{5}\right)^2 = -1 \cdot \frac{4^2}{5^2} = -1 \cdot \frac{4 \cdot 4}{5 \cdot 5} = -1 \cdot \frac{16}{25}$$

$$14) -\left(\frac{20}{11}\right)^2 = -1 \cdot \left(\frac{20}{11}\right)^2 = -1 \cdot \frac{20}{11} \cdot \frac{20}{11} = -1 \cdot \frac{400}{121} = -\frac{400}{121}$$

ili

$$-\left(\frac{20}{11}\right)^2 = -1 \cdot \left(\frac{20}{11}\right)^2 = -1 \cdot \frac{20^2}{11^2} = -1 \cdot \frac{20 \cdot 20}{11 \cdot 11} = -1 \cdot \frac{400}{121} = -\frac{400}{121}$$

$$15) -\left(1\frac{2}{3}\right)^2 = -1 \cdot \left(\frac{1 \cdot 3 + 2}{3}\right)^2 = -1 \cdot \left(\frac{5}{3}\right)^2 = -1 \cdot \frac{5}{3} \cdot \frac{5}{3} = -\frac{25}{9}$$

ili

$$-\left(1\frac{2}{3}\right)^2 = -1 \cdot \left(\frac{1 \cdot 3 + 2}{3}\right)^2 = -1 \cdot \left(\frac{5}{3}\right)^2 = -1 \cdot \frac{5^2}{3^2} = -1 \cdot \frac{5 \cdot 5}{3 \cdot 3} = -\frac{25}{9}$$

$$16) -\left(2\frac{3}{7}\right)^2 = -1 \cdot \left(\frac{2 \cdot 7 + 3}{7}\right)^2 = -1 \cdot \left(\frac{14 + 3}{7}\right)^2 = -1 \cdot \left(\frac{17}{7}\right)^2 = -1 \cdot \frac{17}{7} \cdot \frac{17}{7} = -\frac{289}{49}$$

ili

$$-\left(2\frac{3}{7}\right)^2 = -1 \cdot \left(\frac{2 \cdot 7 + 3}{7}\right)^2 = -1 \cdot \left(\frac{14 + 3}{7}\right)^2 = -1 \cdot \left(\frac{17}{7}\right)^2 = -1 \cdot \frac{17^2}{7^2} = -1 \cdot \frac{17 \cdot 17}{7 \cdot 7} = -\frac{289}{49}$$

Sada smo naučili kvadrirati na više načina, i dalje ćemo u zadacima kvadrirati samo na jedan način koji je najprikladniji za taj zadatak...

## 7. U ovom zadatku primjenimo sve što smo naučili u prvih šest zadataka.

Svaki zadatak ću riješiti na kraći i duži način:

$$1) \quad 5^2 + 3^2 = 25 + 9 = 34 \quad \text{ili} \quad 5^2 + 3^2 = 5 \cdot 5 + 3 \cdot 3 = 25 + 9 = 34$$

$$2) \quad 12^2 + 6^2 = 144 + 36 = 180 \quad \text{ili} \quad 12^2 + 6^2 = 12 \cdot 12 + 6 \cdot 6 = 144 + 36 = 180$$

$$3) \quad 11^2 + 15^2 = 121 + 225 = 346 \quad \text{ili} \quad 11^2 + 15^2 = 11 \cdot 11 + 15 \cdot 15 = 121 + 225 = 346$$

$$4) \quad 17^2 - 10^2 = 289 - 100 = 189 \quad \text{ili} \quad 17^2 - 10^2 = 17 \cdot 17 - 10 \cdot 10 = 289 - 100 = 189$$

$$5) \quad 16^2 - 7^2 = 256 - 49 = 207 \quad \text{ili} \quad 16^2 - 7^2 = 16 \cdot 16 - 7 \cdot 7 = 256 - 49 = 207$$

$$6) \quad 20^2 - 13^2 = 400 - 169 = 231 \quad \text{ili} \quad 20^2 - 13^2 = 20 \cdot 20 - 13 \cdot 13 = 400 - 169 = 231$$

$$7) \quad (-9)^2 + 3^2 = 81 + 9 = 90 \quad \text{ili} \quad (-9)^2 + 3^2 = \underbrace{(-9) \cdot (-9)}_{(-) \cdot (-) = +} + 3 \cdot 3 = 81 + 9 = 90$$

$$8) \quad (-8)^2 + (-9)^2 = 64 + 81 = 145$$

$$\text{ili} \quad (-8)^2 + (-9)^2 = (-8) \cdot (-8) + (-9) \cdot (-9) = 64 + 81 = 145$$

$$9) \quad (-14)^2 + (-20)^2 = 196 + 400 = 596$$

$$\text{ili} \quad (-14)^2 + (-20)^2 = \underbrace{(-14) \cdot (-14)}_{(-) \cdot (-) = +} + \underbrace{(-20) \cdot (-20)}_{(-) \cdot (-) = +} = 196 + 400 = 596$$

$$10) \quad (-5)^2 - (-4)^2 = 25 - 16 = 9$$

$$\text{ili} \quad (-5)^2 - (-4)^2 = (-5) \cdot (-5) - (-4) \cdot (-4) = 25 - 16 = 9$$

$$11) \quad (-18)^2 - (-6)^2 = 324 - 36 = 288$$

$$\text{ili} \quad (-18)^2 - (-6)^2 = (-18) \cdot (-18) - (-6) \cdot (-6) = 324 - 36 = 288$$

$$12) \quad (-20)^2 - 10^2 = 400 - 100 = 300$$

$$\text{ili} \quad (-20)^2 - 10^2 = (-20) \cdot (-20) - 10 \cdot 10 = 400 - 100 = 300$$

8.

$$1) \left(\frac{2}{3}\right)^2 - \left(\frac{3}{4}\right)^2 = \frac{2^2}{3^2} - \frac{3^2}{4^2} = \frac{4}{9} - \frac{9}{16} = \frac{4 \cdot 16 - 9 \cdot 9}{9 \cdot 16} = \frac{64 - 81}{144} = -\frac{17}{144}$$

$$\text{ili } \left(\frac{2}{3}\right)^2 - \left(\frac{3}{4}\right)^2 = \frac{2}{3} \cdot \frac{2}{3} - \frac{3}{4} \cdot \frac{3}{4} = \frac{4}{9} - \frac{9}{16} = \frac{4 \cdot 16 - 9 \cdot 9}{9 \cdot 16} = \frac{64 - 81}{144} = -\frac{17}{144}$$

$$\begin{array}{ccc} (-a)^2 = a^2 & \rightarrow & \downarrow \\ \uparrow & & \downarrow \end{array}$$

$$2) \left(\frac{1}{4}\right)^2 + \left(-\frac{3}{5}\right)^2 = \frac{1^2}{4^2} + \left(\frac{3}{5}\right)^2 = \frac{1}{16} + \frac{3^2}{5^2} = \frac{1}{16} + \frac{9}{25} = \frac{1 \cdot 25 + 9 \cdot 16}{16 \cdot 25} = \frac{25 + 144}{400} = \frac{169}{400}$$

$$\text{ili } \left(\frac{1}{4}\right)^2 + \left(-\frac{3}{5}\right)^2 = \frac{1}{4} \cdot \frac{1}{4} + \left(-\frac{3}{5}\right) \cdot \left(-\frac{3}{5}\right) = \frac{1}{16} + \frac{9}{25} = \frac{1 \cdot 25 + 9 \cdot 16}{16 \cdot 25} = \frac{25 + 144}{400} = \frac{169}{400}$$

$$3) \left(\frac{7}{3}\right)^2 + \left(-\frac{5}{6}\right)^2 = \frac{7^2}{3^2} + \left(\frac{5}{6}\right)^2 = \text{od prije znamo da je } (-a)^2 = a^2 \text{ ovdje: } \left(-\frac{5}{6}\right)^2 = \left(\frac{5}{6}\right)^2$$

$$= \frac{49}{9} + \frac{5^2}{6^2} =$$

$$= \frac{49}{9} + \frac{25}{36} = \frac{49 \cdot 4 + 25}{36} = \frac{196 + 25}{36} = \frac{221}{36}$$

$$\text{ili } \left(\frac{7}{3}\right)^2 + \left(-\frac{5}{6}\right)^2 = \frac{7}{3} \cdot \frac{7}{3} - \left(-\frac{5}{6}\right) \cdot \left(-\frac{5}{6}\right) = \frac{49}{9} + \frac{25}{36} = \frac{49 \cdot 4 + 25}{36} = \frac{196 + 25}{36} = \frac{221}{36}$$

$$4) \frac{6}{5} \cdot \left(-\frac{5}{6}\right)^2 + \left(\frac{2}{3}\right)^2 = \frac{6}{5} \cdot \left(\frac{5}{6}\right)^2 + \frac{2}{3} \cdot \frac{2}{3} = \frac{6}{5} \cdot \frac{5}{6} \cdot \frac{5}{6} + \frac{4}{9} = \frac{5}{6} + \frac{4}{9} = \frac{5 \cdot 3 + 4 \cdot 2}{18} = \frac{15 + 8}{18} = \frac{23}{18}$$

$$5) \frac{1}{2} \cdot \left(\frac{2}{3}\right)^2 + \left(\frac{9}{4}\right)^2 = \frac{1}{2} \cdot \frac{2}{3} \cdot \frac{2}{3} + \frac{9}{4} \cdot \frac{9}{4} = \frac{2}{9} + \frac{81}{16} = \frac{2 \cdot 16 + 81 \cdot 9}{9 \cdot 16} = \frac{32 + 729}{144} = \frac{761}{144} = 5 \frac{41}{144}$$

$$6) \left(\frac{7}{9}\right)^2 \cdot \frac{27}{7} - \frac{81}{121} \cdot \left(-\frac{11}{3}\right)^2 = \frac{7}{9} \cdot \frac{7}{9} \cdot \frac{27}{7} - \frac{81}{121} \cdot \left(-\frac{11}{3}\right) \cdot \left(-\frac{11}{3}\right) =$$

$$= \frac{7 \cdot 7 \cdot 3 \cdot 9}{3 \cdot 3 \cdot 9 \cdot 7} - \frac{9 \cdot 9}{121} \cdot \frac{121}{9} = \quad \text{i sada kratimo}$$

$$= \frac{7 \cdot \cancel{7} \cdot \cancel{3} \cdot \cancel{9}}{3 \cdot \cancel{3} \cdot \cancel{9} \cdot \cancel{7}} - \frac{9 \cdot \cancel{9}}{121} \cdot \frac{121}{\cancel{9}} = \frac{7}{3} - 9 = \frac{7 - 9 \cdot 3}{3} = \frac{7 - 27}{3} = -\frac{20}{3}$$

8.

$$7) \left(\frac{2}{5}\right)^2 \cdot \frac{25}{4} - \left(\frac{3}{4}\right)^2 : \frac{9}{16} = \frac{4}{25} \cdot \frac{25}{4} - \frac{9}{16} \cdot \frac{16}{9} = 1 - 1 = 0$$

kratimo

ili dužim postupkom:

$$\left(\frac{2}{5}\right)^2 \cdot \frac{25}{4} - \left(\frac{3}{4}\right)^2 : \frac{9}{16} = \frac{2}{5} \cdot \frac{2}{5} \cdot \frac{25}{4} - \left(\frac{3}{4} \cdot \frac{3}{4}\right) \cdot \frac{16}{9} = \frac{4}{25} \cdot \frac{25}{4} - \frac{9}{16} \cdot \frac{16}{9} = 1 - 1 = 0$$

$$8) \frac{14}{50} \cdot \left(\frac{5}{7}\right)^2 - \frac{26}{9} \cdot \left(\frac{3}{13}\right)^2 = \frac{14}{50} \cdot \frac{25}{49} - \frac{26}{9} \cdot \frac{9}{169} = \frac{2 \cdot 7}{2 \cdot 25} \cdot \frac{25}{7 \cdot 7} - \frac{2 \cdot 13}{9} \cdot \frac{9}{13 \cdot 13} = \text{kratimo}$$

$$= \frac{1}{7} - \frac{2}{13} = \frac{1 \cdot 13 - 2 \cdot 7}{7 \cdot 13} = \frac{13 - 14}{91} = -\frac{1}{91}$$

$$9) \left(1\frac{3}{5}\right)^2 - \left(\frac{3}{5}\right)^2 : 2 = \left(\frac{1 \cdot 5 + 3}{5}\right)^2 - \frac{9}{25} : 2 = \left(\frac{8}{5}\right)^2 - \frac{9}{25} \cdot \frac{1}{2} =$$

$$= \frac{64}{25} - \frac{9}{50} = \frac{64 \cdot 2 - 9}{50} = \frac{128 - 9}{50} = \frac{119}{50}$$

$$10) \left(\frac{7}{9}\right)^2 : \frac{49}{2} + \left(1\frac{1}{3}\right)^2 = \frac{7^2}{9^2} : \frac{49}{2} + \left(\frac{1 \cdot 3 + 1}{3}\right)^2 = \frac{49}{81} \cdot \frac{2}{49} + \left(\frac{4}{3}\right)^2 = \frac{2}{81} + \frac{16}{9} =$$

$$= \frac{2 + 16 \cdot 9}{81} = \frac{2 + 144}{81} = \frac{146}{81}$$

$$11) (1.2)^2 : \left(\frac{1}{10}\right)^2 = \left(\frac{12}{10}\right)^2 : \left(\frac{1^2}{10^2}\right) = \frac{12^2}{10^2} : \frac{1}{100} = \frac{144}{100} \cdot \frac{100}{1} = 144$$

↓ ovdje možemo i djeliti:

$$= \frac{12^2}{10^2} : \frac{1}{100} = \frac{144 : 1}{100 : 100} = \frac{144}{1} = 144$$

$$12) (-2.5)^2 : \left(\frac{2}{5}\right)^2 = (2.5)^2 : \frac{2^2}{5^2} = (2.5 \cdot 2.5) : \frac{4}{25} = 6.25 : \frac{4}{25} =$$

$$= \frac{625}{100} : \frac{4}{25} = \frac{25 \cdot 25}{4 \cdot 25} : \frac{4}{25} = \frac{25}{4} : \frac{4}{25} = \frac{25}{4} \cdot \frac{25}{4} = \frac{625}{16}$$

ili ovako:

$$(-2.5)^2 : \left(\frac{2}{5}\right)^2 = (2.5)^2 : \frac{2^2}{5^2} = \left(\frac{25}{10}\right)^2 : \frac{4}{25} = \frac{25^2}{10^2} : \frac{4}{25} =$$

$$= \frac{625}{100} : \frac{4}{25} = \frac{25 \cdot 25}{4 \cdot 25} : \frac{4}{25} = \frac{25}{4} : \frac{4}{25} = \frac{25}{4} \cdot \frac{25}{4} = \frac{625}{16}$$

8.

$$13) (-0.7)^2 : \left(\frac{7}{10}\right)^2 = (0.7)^2 : \frac{7^2}{10^2} = \left(\frac{7}{10}\right)^2 : \frac{49}{100} = \frac{7^2}{10^2} : \frac{49}{100} = \frac{49}{100} : \frac{49}{100} = \frac{49:49}{100:100} = \frac{1}{1} = 1$$

↓

$$(-a)^2 = a^2$$

$$14) \left(\frac{5}{6}\right)^2 \cdot (0.6)^2 = \frac{5^2}{6^2} \cdot \left(\frac{6}{10}\right)^2 = \frac{25}{36} \cdot \frac{6^2}{10^2} = \frac{25}{36} \cdot \frac{36}{100} = \frac{25}{36} \cdot \frac{36}{25 \cdot 4} = \frac{1}{4}$$

↓

$$(0.6)^2 = \left(\frac{6}{10}\right)^2 = \frac{6^2}{10^2} = \frac{36}{100}$$

$$15) \left(\frac{9}{8}\right)^2 \cdot \left(\frac{4}{3}\right)^2 = \frac{9^2}{8^2} \cdot \frac{4^2}{3^2} = \frac{81}{64} \cdot \frac{16}{9} = \frac{9 \cdot 9}{4 \cdot 16} \cdot \frac{16}{9} = \frac{9}{4}$$

ili ovako:

$$\left(\frac{9}{8}\right)^2 \cdot \left(\frac{4}{3}\right)^2 = \frac{9}{8} \cdot \frac{9}{8} \cdot \frac{4}{3} \cdot \frac{4}{3} = \frac{9 \cdot 3 \cdot 3 \cdot 4 \cdot 4}{2 \cdot 4 \cdot 2 \cdot 4 \cdot 3 \cdot 3} = \frac{9}{2 \cdot 2} = \frac{9}{4}$$

$$16) (3 \cdot 5)^2 = 3^2 \cdot 5^2 = 9 \cdot 25 = 225 \quad \text{primjenili smo pravilo: } (a \cdot b)^2 = a^2 \cdot b^2$$

$$\text{ili II na\u0107in } (3 \cdot 5)^2 = (15)^2 = 15 \cdot 15 = 225$$

$$17) \overbrace{((-2) \cdot 3)^2}^{(a \cdot b)^2 = a^2 \cdot b^2} = (-2)^2 \cdot 3^2 = (-2) \cdot (-2) \cdot 3 \cdot 3 = 4 \cdot 9 = 36$$

$$\text{ili II na\u0107in: } ((-2) \cdot 3)^2 = (-6)^2 = (-6) \cdot (-6) = 36$$

↓

↑

Prvo pomno\u017eimo unutar zagrade pa kvadriramo

$$18) (4 \cdot (-3))^2 = (-12)^2 = (-12) \cdot (-12) = 144$$

ili II na\u0107in:

$$\overbrace{(4 \cdot (-3))^2}^{(a \cdot b)^2 = a^2 \cdot b^2} = 4^2 \cdot (-3)^2 = 4 \cdot 4 \cdot (-3) \cdot (-3) = 16 \cdot 9 = 144$$

$$19) \left(\frac{1}{2} \cdot \left(-\frac{1}{3}\right)\right)^2 = \left(\frac{1}{2}\right)^2 \cdot \left(-\frac{1}{3}\right)^2 = \frac{1}{2} \cdot \frac{1}{2} \cdot \left(-\frac{1}{3}\right) \cdot \left(-\frac{1}{3}\right) = \frac{1}{4} \cdot \frac{1}{9} = \frac{1}{36}$$

ili II na\u0107in:

$$\left(\frac{1}{2} \cdot \left(-\frac{1}{3}\right)\right)^2 = \left(-\frac{1}{6}\right)^2 = \left(-\frac{1}{6}\right) \cdot \left(-\frac{1}{6}\right) = + \frac{1 \cdot 1}{6 \cdot 6} = \frac{1}{36}$$

8.

$$20) \left( -\frac{1}{2} \cdot \left( -\frac{3}{5} \right) \right)^2 = \left( -\frac{1}{2} \right)^2 \cdot \left( -\frac{3}{5} \right)^2 = \left( -\frac{1}{2} \right) \cdot \left( -\frac{1}{2} \right) \cdot \left( -\frac{3}{5} \right) \cdot \left( -\frac{3}{5} \right) = \frac{1}{4} \cdot \frac{3 \cdot 3}{5 \cdot 5} = \frac{9}{100}$$

$$\text{ili ovako: } \left( -\frac{1}{2} \cdot \left( -\frac{3}{5} \right) \right)^2 = \left( -\frac{1}{2} \right)^2 \cdot \left( -\frac{3}{5} \right)^2 = \left( \frac{1}{2} \right)^2 \cdot \left( \frac{3}{5} \right)^2 = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{3}{5} \cdot \frac{3}{5} = \frac{9}{100}$$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ \text{po pravilu:} & & (-a)^2 = a^2 \rightarrow \uparrow \quad \uparrow \end{array}$$

ili III način:

$$\left( -\frac{1}{2} \cdot \left( -\frac{3}{5} \right) \right)^2 = \left( +\frac{1 \cdot 3}{2 \cdot 5} \right)^2 = \left( \frac{3}{10} \right)^2 = \frac{3}{10} \cdot \frac{3}{10} = \frac{9}{100}$$

$$21) \left( \frac{2}{5} \cdot \frac{10}{3} \right)^2 = \text{prvo skratimo: } \left( \frac{2}{\cancel{5}} \cdot \frac{2 \cdot \cancel{5}}{3} \right)^2 = \left( \frac{4}{3} \right)^2 = \frac{4}{3} \cdot \frac{4}{3} = \frac{16}{9}$$

↓ možemo tu i drugačije nastaviti

$$\left( \frac{4}{3} \right)^2 = \frac{4^2}{3^2} = \frac{4 \cdot 4}{3 \cdot 3} = \frac{16}{9}$$

$$21) (0.2 \cdot 0.3)^2 = 0.2^2 \cdot 0.3^2 = 0.2 \cdot 0.2 \cdot 0.3 \cdot 0.3 = 0.04 \cdot 0.09 = 0.0036$$

ili ovako:

$$(0.2 \cdot 0.3)^2 = (0.06)^2 = 0.06 \cdot 0.06 = 0.0036$$

ili ovako:

$$(0.2 \cdot 0.3)^2 = \left( \frac{2}{10} \cdot \frac{3}{10} \right)^2 = \left( \frac{6}{100} \right)^2 = \frac{6^2}{100^2} = \frac{36}{10000} = 36:10000 = 0.0036$$

$$22) ((-0.1) \cdot (-1.5))^2 = (-0.1)^2 \cdot (-1.5)^2 = (-0.1) \cdot (-0.1) \cdot (-1.5) \cdot (-1.5) = 0.01 \cdot 2.25 = 0.0225$$

ili ovako:

$$((-0.1) \cdot (-1.5))^2 = (-0.1)^2 \cdot (-1.5)^2 = 0.1^2 \cdot 1.5^2 = 0.1 \cdot 0.1 \cdot 1.5 \cdot 1.5 = 0.01 \cdot 2.25 = 0.0225$$

ili ovako:

$$((-0.1) \cdot (-1.5))^2 = (0.15)^2 = 0.15 \cdot 0.15 = 0.0225$$

↓ možemo tu i drugačije nastaviti

$$0.15^2 = \left( \frac{15}{100} \right)^2 = \frac{15^2}{100^2} = \frac{15 \cdot 15}{100 \cdot 100} = \frac{225}{10000} = 225:10000 = 0.0225$$

Zadatci od 16. do 22. spadaju pod potencije pa za bolje razumjevanje pogledajte tamo.

9.

$$1) (0.1)^2 + (0.2)^2 = 0.1 \cdot 0.1 + 0.2 \cdot 0.2 = 0.01 + 0.04 = 0.05$$

ili II način:

$$(0.1)^2 + (0.2)^2 = \left(\frac{1}{10}\right)^2 + \left(\frac{2}{10}\right)^2 = \frac{1^2}{10^2} + \frac{2^2}{10^2} = \frac{1}{100} + \frac{4}{100} = \frac{5}{100} = 5:100 = 0.05$$

$$2) (1.2)^2 + (0.3)^2 = 1.2 \cdot 1.2 + 0.3 \cdot 0.3 = 1.44 + 0.09 = 1.53$$

ili II način:

$$(1.2)^2 + (0.3)^2 = \left(\frac{12}{10}\right)^2 + \left(\frac{3}{10}\right)^2 = \frac{12^2}{10^2} + \frac{3^2}{10^2} = \frac{144}{100} + \frac{9}{100} = \frac{153}{100} = 153:100 = 1.53$$

očito je da II način traje dosta dulje pa ga nećemo niti koristiti u ovom tipu zadataka

$$3) (2.5)^2 + (0.25)^2 = 2.5 \cdot 2.5 + 0.25 \cdot 0.25 = 6.25 + 0.0625 = 6.3125$$

$$4) (-2.3)^2 + (1.2)^2 = 2.3^2 + 1.2 \cdot 1.2 = 2.3 \cdot 2.3 + 1.44 = 5.29 + 1.44 = 6.73$$

↓

$$(-x)^2 = x^2 \quad \text{pa je tako: } (-2.3)^2 = 2.3^2$$

↑

$$5) (-1.5)^2 - (-3.5)^2 = 1.5^2 - 3.5^2 = 1.5 \cdot 1.5 - 3.5 \cdot 3.5 = 2.25 - 12.25 = -10$$

$$\begin{aligned} 6) (-0.5)^2 - (-0.03)^2 &= 0.5^2 - 0.03^2 = && \text{prvo primjenimo pravilo: } (-a)^2 = a^2 \\ &= 0.5 \cdot 0.5 - 0.03 \cdot 0.03 = \\ &= 0.25 - 0.0009 = \\ &= 0.2491 \end{aligned}$$

10. Prvo kvadriramo razlomke, svedemo ih na zajednički nazivnik, pa usporedimo brojnike:

$$\begin{array}{l}
 1) \left(\frac{2}{3}\right)^2 \text{ ili } \left(\frac{1}{2}\right)^2 \\
 \frac{2^2}{3^2} \quad \frac{1^2}{2^2} \\
 \frac{4}{9} \quad \frac{1}{4} \\
 \frac{4 \cdot 4}{9 \cdot 4} \quad \frac{1 \cdot 9}{4 \cdot 9} \\
 \frac{16}{36} \quad \frac{9}{36} \\
 \\
 \frac{16}{36} > \frac{9}{36} \quad \rightarrow \quad \left\{ \begin{array}{l} \frac{16}{36} \text{ je veći od } \frac{9}{36} \text{ to znamo od prije} \\ \text{kada uspoređujemo razlomke istih nazivnika} \\ \text{veći je onaj koji ima veći brojnik} \end{array} \right.
 \end{array}$$

Tada je i

$$\left(\frac{2}{3}\right)^2 > \left(\frac{1}{2}\right)^2$$

$$\begin{array}{l}
 2) \left(\frac{2}{3}\right)^2 \text{ ili } \left(\frac{3}{4}\right)^2 \\
 \frac{2^2}{3^2} \quad \frac{3^2}{4^2} \\
 \frac{4}{9} \quad \frac{9}{16} \\
 \frac{4 \cdot 16}{9 \cdot 16} \quad \frac{9 \cdot 9}{16 \cdot 9} \\
 \frac{64}{144} \quad \frac{81}{144} \\
 \frac{64}{144} < \frac{81}{144}
 \end{array}$$

Tada je i  $\left(\frac{2}{3}\right)^2 < \left(\frac{3}{4}\right)^2$

$$\begin{array}{l}
 3) \left(\frac{1}{2}\right)^2 \text{ ili } \left(-\frac{1}{2}\right)^2 \\
 \frac{1^2}{2^2} \quad \left(\frac{1}{2}\right)^2 \\
 \frac{1}{4} \quad \frac{1^2}{2^2} \\
 \frac{1}{4} \quad \frac{1}{4} \\
 \frac{1}{4} = \frac{1}{4}
 \end{array}$$

Tada je i  $\left(\frac{1}{2}\right)^2 = \left(-\frac{1}{2}\right)^2$

10. Prvo kvadriramo razlomke, svedemo ih na zajednički nazivnik, pa usporedimo brojnik:

$$4) \left( -\frac{3}{4} \right)^2 \text{ ili } \left( -\frac{4}{5} \right)^2 \quad \left. \vphantom{\left( -\frac{3}{4} \right)^2} \right\} \text{ prema pravilu: } (-a)^2 = a^2$$

$$\left( \frac{3}{4} \right)^2 \quad \left( \frac{4}{5} \right)^2$$

$$\frac{3^2}{4^2} \quad \frac{4^2}{5^2}$$

$$\frac{9}{16} \quad \frac{4}{25}$$

$$\frac{9 \cdot 25}{16 \cdot 25} \quad \frac{4 \cdot 16}{25 \cdot 16}$$

$$\frac{225}{400} \quad \frac{64}{400}$$

$$\frac{225}{400} > \frac{64}{400}$$

→ sada razlomke moramo svesti na zajednički nazivnik

jer je:  $225 > 64$

Tada je

$$\left( -\frac{3}{4} \right)^2 > \left( -\frac{4}{5} \right)^2$$

$$5) \left( \frac{2}{3} \right)^2 \text{ ili } \frac{2^2}{3}$$

$$\frac{2^2}{3^2} \quad \frac{4}{3}$$

$$\frac{4}{9} \quad \frac{4}{3}$$

$$\frac{4}{9} \quad \frac{4 \cdot 3}{3 \cdot 3}$$

$$\frac{4}{9} \quad \frac{12}{9}$$

$$\frac{4}{9} > \frac{12}{9}$$

Tada je i:  $\left( \frac{2}{3} \right)^2 > \frac{2^2}{3}$

$$6) \frac{2^2}{3} \text{ ili } \frac{2}{3}$$

$$\frac{4}{3} \quad \frac{2}{3}$$

$$\frac{4}{3} > \frac{2}{3}$$

Tada je i:  $\frac{2^2}{3} > \frac{2}{3}$

već ovdje možemo reći da je:

$$\frac{4}{9} < \frac{4}{3}$$

kada razlomci imaju iste brojnike veći je onaj koji ima manji nazivnik

Tada je i:  $\left( \frac{2}{3} \right)^2 < \frac{2^2}{3}$

10. Prvo kvadriramo razlomke, svedemo ih na zajednički nazivnik, pa usporedimo brojnik:  
 kada razlomci imaju iste brojnike veći je onaj koji ima manji nazivnik  
 kada uspoređujemo razlomke istih nazivnika veći je onaj koji ima veći brojnik

$$7) \frac{1}{7^2} \text{ ili } \frac{1}{49}$$

$$\frac{1}{49} \quad \frac{1}{49}$$

$$\frac{1}{49} = \frac{1}{49}$$

$$\Downarrow$$

$$\frac{1}{7^2} = \frac{1}{49}$$

$$8) \left(\frac{4}{5}\right)^2 \text{ ili } \frac{4^2}{5}$$

$$\frac{4^2}{5^2} \quad \frac{16}{5}$$

$$\frac{16}{25} \quad \frac{16}{5}$$

$$\frac{16}{25} < \frac{16}{5}$$

Tada je i  $\left(\frac{4}{5}\right)^2 < \frac{4^2}{5}$

$$9) \left(\frac{4}{5}\right)^2 \text{ ili } \frac{3}{5^2}$$

$$\frac{4^2}{5^2} \quad \frac{3}{25}$$

$$\frac{16}{25} \quad \frac{3}{25}$$

$$\frac{16}{25} > \frac{3}{25}$$

Tada je i  $\left(\frac{4}{5}\right)^2 > \frac{3}{5^2}$

$$(-0.2)^2 = 0.2^2 \text{ po pravilu } (-a)^2 = a^2$$

↑

$$10) (0.2)^2 \text{ ili } (0.3)^2$$

$$\left(\frac{2}{10}\right)^2 \quad \left(\frac{3}{10}\right)^2$$

$$\frac{2^2}{10^2} \quad \frac{3^2}{10^2}$$

$$\frac{4}{100} \quad \frac{9}{100}$$

$$\frac{4}{100} < \frac{9}{100}$$

↓

Tada je i  $(0.2)^2 < (0.3)^2$

$$11) (-0.2)^2 \text{ ili } (0.4)^2$$

$$(0.2)^2 \quad \left(\frac{4}{10}\right)^2$$

$$\left(\frac{2}{10}\right)^2 \quad \frac{4^2}{10^2}$$

$$\frac{4}{100} \quad \frac{16}{100}$$

$$\frac{4}{100} < \frac{16}{100}$$

Tada je i  $(-0.2)^2 < (0.4)^2$

$$12) (0.3)^2 \text{ ili } (0.09)^2$$

$$\left(\frac{3}{10}\right)^2 \quad \left(\frac{9}{100}\right)^2$$

$$\frac{3^2}{10^2} \quad \frac{9^2}{100^2}$$

$$\frac{9}{100} \quad \frac{81}{10000}$$

$$\frac{9 \cdot 100}{100 \cdot 100} \quad \frac{81}{10000}$$

$$\frac{900}{10000} > \frac{81}{10000}$$

Tada je i  $(0.3)^2 > (0.09)^2$