5.45.

n (dijamanta) $= 2{,}42$

$c = 3 \cdot 10^8$ m/s

$v = ?$

$n = \frac{c}{v}$

$v = \frac{c}{n} = \frac{3 \cdot 10^8}{2{,}42} = 1{,}24 \cdot 10^8$ m/s $= 1{,}2 \cdot 10^8$ m/s

5.46.

$c = 3 \cdot 10^8$ m/s

n_1 (crvena svjetlost) $= 1{,}52$

n_2 (ljubičasta svjetlost) $= 1{,}54$

$v_1 = ?$

$v_2 = ?$

$v_1 = \frac{c}{n_1} = \frac{3 \cdot 10^8}{1{,}52} = 1{,}974 \cdot 10^8$ m/s $=$

$= 197368$ km/s

≈ 197400 km/s

$v_2 = \frac{c}{n_2} = \frac{3 \cdot 10^8}{1{,}54} = 1{,}948 \cdot 10^8$ m/s $\approx$

≈ 194800 km/s

5.47.

$c = 3 \cdot 10^8$ m/s $= 3 \cdot 10^5$ km/s

$v = 123554$ km/s

n (dijamanta) $= ?$

$n = \frac{c}{v} = \frac{3 \cdot 10^5}{123554} = \frac{300000}{123554} = 2{,}42$

5.48.

$n_{2/1} = 1{,}61$

n_1 (staklo) $= 1{,}50$

n_2 (dijamant) $= ?$

$n_{2/1}$ = relativni indeks loma pri prijelazu svjetlosti iz stakla u dijamant

$n_{2/1} = \frac{n_2}{n_1} \quad / \cdot n_1$

$n_2 = n_{2/1} \cdot n_1 = 1{,}61 \cdot 1{,}50 = 2{,}415 \approx 2{,}42$

5.49.

$n_{2/1} = 0{,}91$

n_2 (voda) $= 1{,}33$

n_1 (oleinske kiseline) $= ?$

$n_{2/1} = \frac{n_2}{n_1} \quad / \cdot n_1$

$n_{2/1} \cdot n_1 = n_2 \quad / : n_{2/1}$

$n_1 = \frac{n_2}{n_{2/1}} = \frac{1{,}33}{0{,}91} = 1{,}46$

5.50.

$\alpha = \gamma = 45°$

n (vode) $= 1{,}33$

β (L) $= ?$

$n = \frac{\sin\alpha}{\sin\beta}$

$\sin\beta = \frac{\sin\alpha}{n} = \frac{\sin 45°}{1{,}33} = \frac{0{,}707}{1{,}33} = 0{,}5316$

$\beta = \sin^{-1} 0{,}5316 = 32{,}114° = 32° 7'$

$0{,}11460 = 6{,}84 \approx 7'$