IZRAŽANJE NEZNANIH KOLIČIN IZ FORMUL

Iz spodnjih formul izrazi zahtevane količine.

1. $o = 4a$, $a = ?$

$4a = o$ ⟵ zamenjaš levo in desno stran (pri tem se predznaki ne menjajo)

$4a = o \ /:4$

$a = \frac{o}{4}$ ⟵ deliš s številko ali črko, ki je zraven

2. $o = 6a$, $a = ?$

$6a = o \ /:6$

$a = \frac{o}{6}$

3. $s = v \cdot t$, $v = ?$

$v \cdot t = s \ /:t$

$v = \frac{s}{t}$

4. $s = v \cdot t$, $t = ?$

$v \cdot t = s \ /:v$

$t = \frac{s}{v}$

5. $p = a \cdot v_a$, $a = ?$

$a \cdot v_a = p \ /:v_a$

$a = \frac{p}{v_a}$

6. $p = b \cdot v_b$, $v_b = ?$

$b \cdot v_b = p \ /:b$

$v_b = \frac{p}{b}$

7. $F = ma$, $m = ?$

$ma = F \ /:a$

$m = \frac{F}{a}$

8. $F = kx$, $x = ?$

$kx = F \ /:k$

$x = \frac{F}{k}$

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9. $F = p \cdot S$, $p = ?$

$p \cdot S = F \quad / : S$

$\underline{\underline{p = \frac{F}{S}}}$

10. $\sigma = 2\pi r$, $r = ?$

$2\pi r = \sigma \quad / : 2\pi$

$\underline{\underline{r = \frac{\sigma}{2\pi}}}$

11. $\sigma = a + b + c$, $b = ?$

$a + b + c = \sigma$ a in c daš na drugo stran (menjaš predznak)

$\underline{\underline{b = \sigma - a - c}}$

12. $\sigma = 2a + c$, $a = ?$

$2a + c = \sigma$

$2a = \sigma - c \quad / : 2$

$\underline{\underline{a = \frac{\sigma - c}{2}}}$

13. $P = O + pl$, $pl = ?$

$O + pl = P$

$\underline{\underline{pl = P - O}}$

14. $pl = \pi r s$, $s = ?$

$\pi r s = pl \quad / : \pi r$

$\underline{\underline{s = \frac{pl}{\pi r}}}$

15. $v = v_0 + at$, $v_0 = ?$

$v_0 + at = v$

$\underline{\underline{v_0 = v - at}}$

16. $v = v_0 + at$, $a = ?$

$v_0 + at = v$

$at = v - v_0 \quad / : t$

$\underline{\underline{a = \frac{v - v_0}{t}}}$

17. $s = \frac{a+c}{2}$, $c = ?$

$\frac{a+c}{2} = s \quad / \cdot 2$ množiš, da se znebiš ulomka

$a + c = 2s$

$\underline{\underline{c = 2s - a}}$

$\frac{a+c}{\cancel{2}} \cdot \cancel{2} = a + c$

18. $r = \frac{a\sqrt{3}}{2}$, $a = ?$

$\frac{a\sqrt{3}}{2} = r \quad / \cdot 2$

$a\sqrt{3} = 2r \quad / : \sqrt{3}$

$\underline{\underline{a = \frac{2r}{\sqrt{3}}}}$

če je r imenovalcu koren, lahko racionaliziraš

$a = \frac{2r \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \underline{\underline{\frac{2\sqrt{3}r}{3}}}$

$\sqrt{3} \cdot \sqrt{3} = \sqrt{9} = 3$

19. $P = 6a^2$, $a = ?$

$6a^2 = P \quad / : 6$

$a^2 = \frac{P}{6} \quad / \sqrt{\ }$ ker je a^2 kvadrat

$\underline{\underline{a = \sqrt{\frac{P}{6}}}}$

$\sqrt{a^2} = a$

20. $V = abc$, $b = ?$

$abc = V \quad / : ac$

$\underline{\underline{b = \frac{V}{ac}}}$

21. $p = \frac{1}{2}ef$, $f = ?$

$\frac{1}{2}ef = p \quad / \cdot 2$

$ef = 2p \quad / : e$

$\underline{\underline{f = \frac{2p}{e}}}$

22. $p = \pi r^2$, $r = ?$

$\pi r^2 = p \quad / : \pi$

$r^2 = \frac{p}{\pi} \quad / \sqrt{\ }$

$\underline{\underline{r = \sqrt{\frac{p}{\pi}}}}$

23. $W = \frac{Rx^2}{2}$, $R = ?$

$\frac{Rx^2}{2} = W \quad / \cdot 2$

$Rx^2 = 2W \quad / : x^2$

$\underline{\underline{R = \frac{2W}{x^2}}}$

24. $W = \frac{Rx^2}{2}$, $x = ?$

$\frac{Rx^2}{2} = W \quad / \cdot 2$

$Rx^2 = 2W \quad / : R$

$x^2 = \frac{2W}{R} \quad / \sqrt{\ }$

$\underline{\underline{x = \sqrt{\frac{2W}{R}}}}$

25. $P = \frac{A}{t}$, $t = ?$

$P = \frac{A}{t}$ /· t množiš, da se znebiš imenovalca $\frac{A}{\cancel{t}} \cdot \cancel{t} = A$

$Pt = A$ /: P

$t = \frac{A}{P}$

26. $s = \frac{at^2}{2}$, $a = ?$

$\frac{at^2}{2} = s$ /· 2

$at^2 = 2s$ /: t^2

$a = \frac{2s}{t^2}$

27. $W_k = \frac{mv^2}{2}$, $v = ?$

$\frac{mv^2}{2} = W_k$ /· 2

$mv^2 = 2W_k$ /: m

$v^2 = \frac{2W_k}{m}$ /$\sqrt{\ }$

$v = \sqrt{\frac{2W_k}{m}}$

28. $p = \frac{a^2\sqrt{3}}{4}$, $a = ?$

$\frac{a^2\sqrt{3}}{4} = p$ /· 4

$a^2\sqrt{3} = 4p$ /: $\sqrt{3}$

$a^2 = \frac{4p}{\sqrt{3}}$ /$\sqrt{\ }$

$a = \sqrt{\frac{4p}{\sqrt{3}}}$

29. $p = \frac{\pi r^2 \alpha}{360°}$, $\alpha = ?$

$\frac{\pi r^2 \alpha}{360°} = p$ /· 360°

$\pi r^2 \alpha = p \cdot 360°$ /: πr^2

$\alpha = \frac{p \cdot 360°}{\pi r^2}$

30. $p = \frac{\pi r^2 \alpha}{360°}$, $r = ?$

$\frac{\pi r^2 \alpha}{360°} = p$ /· 360°

$\pi r^2 \alpha = p \cdot 360°$ /: $\pi\alpha$

$r^2 = \frac{p \cdot 360°}{\pi\alpha}$ /$\sqrt{\ }$

$r = \sqrt{\frac{p \cdot 360°}{\pi\alpha}}$

31. $v = \frac{2\pi r}{t_0}$, $t_0 = ?$

$v = \frac{2\pi r}{t_0} \quad / \cdot t_0$

$v t_0 = 2\pi r \quad / : v$

$t_0 = \frac{2\pi r}{v}$

32. $v = \frac{2\pi r}{t_0}$, $r = ?$

$v = \frac{2\pi r}{t_0} \quad / \cdot t_0$

$v t_0 = 2\pi r$

$2\pi r = v t_0 \quad / : 2\pi$

$r = \frac{v t_0}{2\pi}$

33. $P = 2\pi r^2 + 2\pi r v$, $v = ?$

$2\pi r^2 + 2\pi r v = P$

$2\pi r v = P - 2\pi r^2 \quad / : 2\pi r$

$v = \frac{P - 2\pi r^2}{2\pi r}$

34. $c^2 = a^2 + b^2$, $a = ?$

$a^2 + b^2 = c^2$

$a^2 = c^2 - b^2 \quad / \sqrt{\ }$

$a = \sqrt{c^2 - b^2}$

35. $P = \pi r^2 + \pi r s$, $s = ?$

$\pi r^2 + \pi r s = P$

$\pi r s = P - \pi r^2 \quad / : \pi r$

$s = \frac{P - \pi r^2}{\pi r}$

36. $\sigma = 2(a+b)$, $a = ?$

najprej odpraviš oklepaj

$\sigma = 2a + 2b$

$2a + 2b = \sigma$

$2a = \sigma - 2b \quad / : 2$

$a = \frac{\sigma - 2b}{2}$

37. $N = (m_1 + m_2)g$, $m_2 = ?$

$N = m_1 g + m_2 g$

$m_1 g + m_2 g = N$

$m_2 g = N - m_1 g \quad / : g$

$m_2 = \frac{N - m_1 g}{g}$

38. $N = (m_1 + m_2)\,g$, $g = ?$

$(m_1 + m_2)\,g = N \;/:(m_1 + m_2)$ → deliš z vsoto (ker je pomnožena z g)

$$g = \frac{N}{m_1 + m_2}$$

39. $Q = mc\,(T_2 - T_1)$, $m = ?$

$mc\,(T_2 - T_1) = Q \;/: c(T_2 - T_1)$

$$m = \frac{Q}{c(T_2 - T_1)}$$

40. $Q = mc\,(T_2 - T_1)$, $c = ?$

$mc\,(T_2 - T_1) = Q \;/: m(T_2 - T_1)$

$$c = \frac{Q}{m(T_2 - T_1)}$$

41. $Q = mc\,(T_2 - T_1)$, $T_2 = ?$

najprej odpraviš oklepaj $\quad Q = mc(T_2 - T_1)$

$Q = mcT_2 - mcT_1$

$mcT_2 - mcT_1 = Q$

$mcT_2 = Q + mcT_1 \;/: mc$

$$T_2 = \frac{Q + mcT_1}{mc}$$

42. $Q = mc\,(T_2 - T_1)$, $T_1 = ?$

$Q = mcT_2 - mcT_1$

$mcT_2 - mcT_1 = Q$

$-mcT_1 = Q - mcT_2 \;/\cdot(-1)$

$mcT_1 = -Q + mcT_2 \;/: mc$

$$T_1 = \frac{mcT_2 - Q}{mc}$$

43. $P = 2ab + 2ac + 2bc$, $a = ?$

$2ab + 2ac + 2bc = P$

$2ab + 2ac = P - 2bc$ izpostaviš a

$a(2b + 2c) = P - 2bc \quad / : (2b + 2c)$

$$a = \frac{P - 2bc}{2b + 2c}$$

44. $P = 2ab + 2ac + 2bc$, $b = ?$

$2ab + 2ac + 2bc = P$

$2ab + 2bc = P - 2ac$

$b(2a + 2c) = P - 2ac \quad / : (2a + 2c)$

$$b = \frac{P - 2ac}{2a + 2c}$$

45. $\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$, $R_1 = ?$

$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} \quad / \cdot RR_1R_2$ množiš z imenovalci, da se znebiš ulomkov

$R_1R_2 = RR_2 + RR_1$ daš na levo

$R_1R_2 - RR_1 = RR_2$

$R_1(R_2 - R) = RR_2 \quad / : (R_2 - R)$

$$R_1 = \frac{RR_2}{R_2 - R}$$

$\frac{1}{\cancel{R}} \cdot \cancel{R}R_1R_2 = R_1R_2$

$\frac{1}{\cancel{R_1}} \cdot R\cancel{R_1}R_2 = RR_2$

$\frac{1}{\cancel{R_2}} \cdot RR_1\cancel{R_2} = RR_1$

46. $\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$, $R = ?$

$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$ / · RR_1R_2

$R_1R_2 = RR_2 + RR_1$

$RR_2 + RR_1 = R_1R_2$

$R(R_2 + R_1) = R_1R_2$ / : $(R_2 + R_1)$

$\underline{\underline{R = \frac{R_1R_2}{R_2+R_1}}}$

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47. $\frac{F_1}{F_2} = \frac{M_1}{M_2}$, $F_1 = ?$

$\frac{F_1}{F_2} = \frac{M_1}{M_2}$ / · F_2M_2

$F_1M_2 = M_1F_2$ / : M_2

$\underline{\underline{F_1 = \frac{M_1F_2}{M_2}}}$

48. $\frac{F_1}{F_2} = \frac{M_1}{M_2}$, $M_2 = ?$

$\frac{F_1}{F_2} = \frac{M_1}{M_2}$ / · F_2M_2

$F_1M_2 = M_1F_2$ / : F_1

$\underline{\underline{M_2 = \frac{M_1F_2}{F_1}}}$

$M_1 = \frac{F_1M_2}{F_2}$

$F_2 = \frac{F_1M_2}{M_1}$