

100 SOALAN ALGEBRA FORMULA

Bagi setiap soalan berikut terdapat dua unknown berbeza, jawab 4 soalan berikut;

- a) Perkarakan unknown pertama, dalam bentuk termudah
- b) Perkarakan unknown kedua, dalam bentuk termudah
- c) Dari jawapan b), perkarakan unknown pertama, dalam bentuk termudah
- d) Buktikan bahawa jawapan c) sama dengan jawapan a)

1. $2(3 + m) = n$

2. $\frac{1}{2}(2m + q) = -13q$

3. $\frac{1}{2}\left(\frac{3}{2} + m\right) = -n$

4. $\frac{1}{2}\left(-\frac{3}{2} - m\right) = \frac{n}{7}$

5. $\frac{2}{m}\left(p + \frac{3}{2}\right) = p + 1$

6. $-2xy + 4x - 6y = 0$

7. $-2xy + \frac{4x}{7} - \frac{7}{6} = 0$

8. $\frac{-2x+3}{5} + \frac{4xy}{7} - \frac{7}{6} = 0$

9. $-\frac{2x+3y}{5} + \frac{3x}{16} - \frac{6y}{7} = 0$

10. $\frac{-2x-3}{5} + \frac{4x}{17} + 11y = 0$

11. $\frac{x}{x+y} + \frac{1-x}{x+y} = 0$

12. $\frac{-2x}{x+y} - \frac{1+xy}{x+y} = 0$

13. $\frac{-\frac{2}{3x}}{2x-y} - \frac{y+\frac{1}{x}}{2x-y} = 0$

14. $\frac{13x}{15y} - 3 + \frac{x}{4} = 1$

15. $\frac{k+2}{4+k} = \frac{m-2}{4+m}$

16. $\frac{k+2}{4+k} = 1 + \frac{m-2}{4+m}$

17. $\frac{k+2}{-4} = \frac{1}{2} + m + \frac{m-2}{4}$

18. $\frac{-2x+3}{y} = x$

19. $\frac{1+m}{2} + \frac{3}{4n} = 100$

20. $\frac{x+y}{xy} = 1.2$

(jawapan dalam bentuk percahan termudah)

21. $\frac{2(3+m)}{\frac{k-2}{-4+k}} + \frac{1}{2}\left(\frac{3}{2} + m\right) = 0$

22. $\frac{1}{f} = \frac{1}{v} + \frac{1}{2} + \frac{1}{2f}$

23. $\frac{1}{a} = \frac{1}{2} + \frac{1}{3c}$

24. $\frac{1}{a} = -\frac{1}{2} - \frac{1}{3c}$

25. $\frac{1}{2b} = -\frac{1}{2} - \frac{1}{a+3}$

26. $\frac{1}{2}m = \frac{3-10n}{3} - \frac{6}{7}$

27. $\frac{3(1-\frac{m}{2})}{n} = 10m - 6$

28. $\frac{3-2m}{1-p} = \frac{m-31}{p-2}$

29. $2x = 3y + 4\frac{2}{3}$

30. $-x = \frac{3}{2}y - 4$

31. $\frac{-x}{2} + 1 = \frac{3}{2} - 4y$

32. $\frac{-x}{3} + 2 = -\frac{3}{2} - 4y$

33. $3\frac{3}{x} + \frac{1}{y} = \frac{5}{2}$

34. $\frac{1}{a} + \frac{b-3}{-2} = \frac{3}{2} - (4 - b)$

$$35. \frac{5}{1-2p} = k + 17$$

$$36. \frac{5+k}{1-3p} = 13k$$

$$37. \frac{5-\frac{k}{2}}{1-\frac{3p}{2}} = \frac{13}{2}$$

$$38. \frac{-5-\frac{k}{2}}{-1+3p} = 13k$$

$$39. \frac{2(3x-4y)}{x} = 10$$

$$40. \frac{\frac{2}{3}(3x-\frac{4}{3}y)}{x} = \frac{x}{12}$$

$$41. \frac{1}{a} = \frac{1}{2} + \frac{3-m}{12} - m$$

$$42. \frac{2}{3}p - 5q = 11$$

$$43. -\frac{2}{3}p + 5q = 11p - \frac{2q}{7}$$

$$44. \frac{-x}{2} + 1 = \frac{4(x-1)}{7y}$$

$$45. \frac{-x}{2} + 1 = \frac{4(x-1)}{7(y-1)} + 2$$

$$46. \frac{T}{2k} = \frac{-2T+1}{\left(\frac{13(k-1)}{4}\right)}$$

$$47. \frac{1}{8}k = \frac{1+h}{1-h}$$

$$48. \frac{1}{8}k = \frac{1-h}{1+h} + 4$$

$$49. u = 2v - 3 + \frac{u+v}{6} - 4v$$

$$50. \frac{-T}{2} = -2T + \frac{1}{13(k-1)}$$

$$51. \frac{2}{3}p - 5q = 1$$

$$52. 2\frac{3}{p} - 5q = 1$$

$$53. -2\frac{3}{p} - 5\frac{1}{p} = 1$$

$$54. \frac{V}{3} = 4P - 2\frac{V}{3}$$

$$55. m^2 = L + \left(\frac{3m-L}{3}\right)m$$

$$56. \frac{y-3}{y-1} = \frac{x-3}{x+1}$$

$$57. \frac{2x+3y}{243} = \frac{2}{5}$$

$$58. \frac{2x+3y}{-111} = \frac{2(x+\frac{1}{2}y)}{5}$$

$$59. y - 3 = m(3 - y)$$

$$60. y + \frac{3}{2} = \frac{m}{2} \left(3 - \frac{y}{2}\right)$$

$$61. \frac{y}{2} - \frac{3}{2} = -\frac{m}{2} \left(3 - \frac{y}{2}\right)$$

$$62. y = \frac{2u+3y}{-4u} - 3$$

$$63. y = \frac{2u-3y}{-4u} - 4$$

$$64. 5A = \frac{1}{2}r^2$$

$$65. a + b - 2ab = 3ab$$

$$66. \frac{a}{2} + b - 2ab = \frac{ab}{4}$$

$$67. -3.2a + 1.2b - \frac{2}{3}(a + b) = 0$$

(jawapan dalam bentuk pecahan termudah)

$$68. \frac{-3.2(a+b)}{1.2} + 1.2b = \frac{12}{5}$$

(jawapan dalam bentuk pecahan termudah)

$$69. a = 2a + (a - 1)m$$

$$70. \frac{1}{y} = \frac{x}{2y} - 3\left(x + \frac{1}{2}\right)$$

$$71. 5 = \frac{x}{5+y} - 1.23$$

$$72. S = \frac{n}{2} \left(S - \frac{1}{2}\right)$$

$$73. 5 - S = \frac{n}{2} \left(S - \frac{1}{2}\right)$$

74. $\frac{5}{2} - S = \left(\frac{n+1}{2}\right) \left(S + \frac{1}{2}\right)$

75. $\frac{1}{y} = \frac{1}{x} + 1$

76. $\frac{3+x}{4y} - \frac{2-5x}{3y} = 0$

77. $\frac{\frac{3}{2}+x}{4y} - \frac{2-5x}{3y} = 0$

78. $8x - x(8 - y) = 0$

79. $-8x + x(8 - y) = 0$

80. $\frac{3y-1}{m} - \frac{y+6}{4} = 13$

81. $\frac{3y}{w} - \frac{y+2}{w} = 0$

82. $\frac{3y}{w} - \frac{y-2}{w} = 1$

83. $7hk - 8(2 - hk) = hk$

84. $-7hk - \frac{1}{2}(2 - \frac{hk}{2}) = k - h$

85. $-\frac{7}{2}hk - \frac{1}{2}(h + k) = \frac{1}{2}h - k$

86. $(m + 4)(3n - 2) + (m - 3)(n - 1) = 0$

87. $(2x - 9)(y + 2) = 18$

88. $\frac{1}{2}(2x - 9)(y + \frac{2}{3}) = 18y - 3$

89. $\frac{1-7p}{q} = 4p$

90. $3(m + 14) - 4(n - 12) = 2m + 11n$

91. $m - 4w = w(10 + 3m)$

92. $m - 4(w + m) = w(10 + 3m)$

93. $\frac{1-7p}{q} - 4(p + 1) = 0$

94. $-x - 4w = w\left(\frac{10}{2} + \frac{3x}{6}\right)$

95. $(12r - 1)(m - 2) = 16mr$

96. $\frac{2}{5}(1 + vw) - \frac{1}{2}(v - 3w) = 1$

97. $\frac{2w}{r+4} = \frac{w-4}{4r}$

98. $\frac{2w-1}{r-4} = \frac{\frac{1}{2}w-4}{4+r}$

99. $\frac{6-3w}{2} = \frac{\frac{1}{2}w-4}{4+r}$

100. $\frac{\frac{6}{2}p - \frac{3}{4}r}{21} = pr - 3(r + p)$

JAWAPAN AKHIR SEMUA 100 SOALAN

Untuk soalan c), jawapan adalah sama dengan jawapan a)

Untuk soalan c), jawapan adalah tuliskan sama ada "**terbukti jawapan soalan c) sama dengan jawapan soalan a) ?**" (rujuk skema jawapan soalan 1 hingga 34 untuk cara tulis jawapan soalan ini)

	a)	b)
1	$m = \frac{n-6}{2}$	$n = 6 + 2m$
2	$m = -\frac{27}{2}q$	$q = -\frac{2m}{27}$
3	$m = -2n - \frac{3}{2}$	$n = -\frac{m}{2} - \frac{3}{4}$
4	$m = -\frac{2n}{7} - \frac{3}{2}$	$n = -\frac{7m}{2} - \frac{21}{4}$
5	$m = \frac{2p+3}{p+1}$	$p = \frac{m-3}{2-m}$
6	$x = \frac{3y}{2-y}$	$y = \frac{2x}{x+3}$
7	$x = \frac{49}{24-84y}$	$y = \frac{24x-49}{84x}$
8	$x = \frac{119}{120y-84}$	$y = \frac{119+84x}{120x}$
9	$x = -\frac{48y}{7}$	$y = -\frac{7x}{48}$
10	$x = \frac{935y-51}{14}$	$y = \frac{14x+51}{935}$
11	$x = -y$	$y = -x$
12	$x = -\frac{1}{y+2}$	$y = -\frac{1+2x}{x}$
13	$x = \frac{-5}{3y}$	$y = \frac{-5}{3x}$
14	$x = \frac{240y}{52+15y}$	$y = \frac{52x}{240-15x}$
15	$k = \frac{m-8}{3}$	$m = 3k + 8$
16	$k = \frac{6m}{2-m}$	$m = \frac{2k}{k+6}$

	a)	b)
17	$k = -5m - 2$	$k = -5m - 2$
18	$x = \frac{3}{2+y}$	$y = \frac{3-2x}{x}$
19	$m = \frac{398n-3}{2n}$	$n = \frac{3}{398-2m}$
20	$x = \frac{5y}{6y-5}$	$y = \frac{5x}{6x-5}$
21	$m = \frac{102-27k}{10k-36}$	$k = \frac{102+36m}{27+10m}$
22	$f = \frac{v}{2+v}$	$v = \frac{2f}{1-f}$
23	$a = \frac{6c}{3c+2}$	$c = \frac{2a}{6-3a}$
24	$a = -\frac{6c}{3c+2}$	$c = -\frac{2a}{3a+6}$
25	$b = -\frac{a+3}{a+5}$	$a = -\frac{5b+3}{b+1}$
26	$m = \frac{6-140n}{21}$	$n = \frac{-21m+6}{140}$
27	$m = \frac{12n+6}{20n+3}$	$n = \frac{6-3m}{20m-12}$
28	$m = \frac{28p-25}{3-p}$	$p = \frac{3m+25}{m+28}$
29	$x = \frac{9y+14}{6}$	$y = \frac{6x-14}{9}$
30	$x = \frac{-3y+8}{2}$	$y = \frac{8-2x}{3}$
31	$x = 8y - 1$	$y = \frac{x+1}{8}$
32	$x = \frac{21+24y}{2}$	$y = \frac{2x-21}{24}$

	a)	b)
33	$x = \frac{-6y}{y+2}$	$y = -\frac{2x}{x+6}$
34	$a = \frac{2}{3b-8}$	$b = \frac{8a+2}{3a}$
35	$p = \frac{k+12}{2k+34}$	$k = \frac{34p-12}{1-2p}$
36	$k = \frac{5}{12-39p}$	$p = \frac{12k-5}{39k}$
37	$k = \frac{39p-6}{2}$	$p = \frac{6+2k}{39}$
38	$k = \frac{10}{25-78p}$	$p = \frac{25k-10}{78k}$
39	$x = -2y$	$y = -\frac{x}{2}$
40	$x = \frac{32y-3}{72}$	$y = \frac{3+72x}{32}$
41	$a = \frac{12}{9-13m}$	$m = \frac{9a-12}{13a}$
42	$p = \frac{33+15q}{2}$	$q = \frac{2p-33}{15}$
43	$p = \frac{111q}{245}$	$q = \frac{245p}{111}$
44	$x = \frac{14y+8}{7y+8}$	$y = \frac{8x-8}{14-7x}$
45	$x = \frac{22-14y}{7y+1}$	$y = \frac{22-x}{7x+14}$
46	$T = \frac{8k}{29k-13}$	$k = \frac{13T}{29T-8}$
47	$k = \frac{8+8h}{1-h}$	$h = \frac{k-8}{k+8}$
48	$k = \frac{24h+40}{1+h}$	$h = \frac{40-k}{k-24}$
49	$u = -\frac{11v+18}{5}$	$v = -\frac{5u+18}{11}$
50	$T = \frac{2}{39k-39}$	$k = \frac{39T+2}{39T}$
51	$p = \frac{15q+3}{2}$	$q = \frac{2p-3}{15}$

	a)	b)
52	$p = \frac{3}{5q-1}$	$q = \frac{p+3}{5p}$
53	$p = -\frac{6}{q+16}$	$q = -\frac{16p+6}{p}$
54	$v = 6p-3$	$p = \frac{v+3}{6}$
55	$m = \frac{3L}{4}$	$L = \frac{4m}{3}$
56	$y = \frac{x+3}{2}$	$x = 2y-3$
57	$x = \frac{486-15y}{10}$	$y = \frac{486-10x}{15}$
58	$x = -\frac{63}{116}y$	$y = -\frac{116}{63}x$
59	$y = \frac{3m-3}{1+m}$	$m = \frac{y-3}{3-y}$
60	$y = \frac{6m-6}{m+4}$	$m = \frac{4y+6}{6-y}$
61	$y = \frac{6-6m}{2-m}$	$m = \frac{6-2y}{6-y}$
62	$y = -\frac{14u}{4u+3}$	$u = -\frac{3y}{4y+14}$
63	$y = \frac{18u}{3-4u}$	$u = \frac{3y}{4y+18}$
64	$A = \frac{1}{10}r^2$	$r = \sqrt{10A}$
65	$a = \frac{b}{5b-1}$	$b = \frac{a}{5a-1}$
66	$a = \frac{4b}{9b-2}$	$b = \frac{2a}{9a-4}$
67	$a = \frac{4b}{29}$	$b = \frac{29a}{4}$
68	$a = -\frac{11b+18}{20}$	$b = -\frac{18+20a}{11}$
69	$a = \frac{m}{m+1}$	$m = \frac{a}{1-a}$
70	$y = \frac{x-2}{6x+3}$	$x = \frac{2+3y}{1-6y}$

	a)	b)
71	$x = \frac{623y+3115}{100}$	$y = \frac{100x-3115}{623}$
72	$s = \frac{n}{2n-4}$	$n = \frac{4s}{2s-1}$
73	$s = \frac{n+20}{2n+4}$	$n = \frac{20-4s}{2s-1}$
74	$s = \frac{9-n}{2n+6}$	$n = \frac{9-6s}{2s+1}$
75	$y = \frac{x}{x+1}$	$x = \frac{y}{1-y}$
76	$x = -\frac{20y+1}{3}$	$y = -\frac{3x+1}{20}$
77	$x = \frac{7-40y}{6}$	$y = \frac{7-6x}{40}$
78	$x = \frac{10}{y-1}$	$y = \frac{x+10}{x}$
79	$x = \frac{10}{1-y}$	$y = \frac{x-10}{x}$
80	$y = \frac{58m+4}{12-m}$	$m = \frac{12y-4}{y+58}$
81	$y = w$	$w = y$
82	$y = \frac{w-2}{2}$	$w = 2y+2$
83	$h = \frac{8}{7k}$	$k = \frac{8}{7h}$
84	$h = \frac{4k+4}{4-27k}$	$k = \frac{4h-4}{27h+4}$
85	$h = \frac{k}{7k+2}$	$k = \frac{2h}{1-7h}$
86	$m = \frac{5-9n}{4n-3}$	$n = \frac{3m+5}{4m+9}$
87	$x = \frac{9y+36}{2y+4}$	$y = \frac{36-4x}{2x-9}$
88	$x = \frac{135y}{6y+4}$	$y = \frac{4x}{135-6x}$
89	$p = \frac{1}{4q+7}$	$q = \frac{1-7p}{4p}$
90	$m = 15n - 90$	$n = \frac{m+90}{15}$

	a)	b)
91	$m = \frac{14w}{1-3w}$	$w = \frac{m}{3m+14}$
92	$m = -\frac{14w}{3w+3}$	$w = -\frac{3m}{3m+14}$
93	$p = \frac{1-4q}{4q+7}$	$q = \frac{1-7p}{4p+4}$
94	$x = -\frac{44w}{3w+6}$	$w = -\frac{6x}{3x+44}$
95	$r = \frac{2-m}{14m+24}$	$m = \frac{2-24r}{4r+1}$
96	$v = \frac{6-15w}{4w-5}$	$w = \frac{5v+6}{4v+15}$
97	$w = \frac{4r+16}{4-7r}$	$r = \frac{4w-16}{7w+4}$
98	$w = \frac{40-6r}{20+3r}$	$r = \frac{40-20w}{3w+6}$
99	$w = \frac{6r+32}{3r+13}$	$r = \frac{13w-32}{6-3w}$
100	$p = \frac{249r}{84r-264}$	$r = \frac{264p}{84p-249}$