

Beginner 1

Scoring numbers: 1, 2, 3

Gates	Equations
1, 3	$(3 + 1) - 2 = 2$
3, 5	$(3 + 2) - 1 = 4$
4, 6	$1 \times (3 + 2) = 5$
5, 7	$(1 + 2) + 3 = 6$
6, 8	$1 + (3 \times 2) = 7$

Beginner 2

Scoring numbers: 1, 2, 6

Gates	Equations
2, 4	$(6 - 2) - 1 = 3$
4, 6	$(6 + 1) - 2 = 5$
6, 8	$(6 + 2) - 1 = 7$
7, 9	$1 \times (6 + 2) = 8$
8, 10	$(1 + 2) + 6 = 9$

Beginner 3

Scoring numbers: 2, 3, 6

Gates	Equations
0, 2	$(6 - 3) - 2 = 1$
4, 6	$(6 + 2) - 3 = 5$
6, 8	$(6 + 3) - 2 = 7$
10, 12	$(2 + 3) + 6 = 11$
11, 13	$3 \times (6 - 2) = 12$

Beginner 4

Scoring numbers: 1, 3, 5

Gates	Equations
0, 2	$(5 - 3) - 1 = 1$
1, 3	$5 - (3 \times 1) = 2$
2, 4	$(5 + 1) - 3 = 3$
6, 8	$(5 + 3) - 1 = 7$
8, 10	$(1 + 3) + 5 = 9$

Beginner 5

Scoring numbers: 1, 4, 6

Gates	Equations
0, 2	$(6 - 4) - 1 = 1$
2, 4	$(6 + 1) - 4 = 3$
8, 10	$(6 + 4) - 1 = 9$
9, 11	$1 \times (6 + 4) = 10$
10, 12	$(1 + 4) + 6 = 11$

Beginner 6

Scoring numbers: 2, 2, 3

Gates	Equations
0, 2	$(2 + 2) - 3 = 1$
1, 3	$2 \times (3 - 2) = 2$
2, 4	$(3 + 2) - 2 = 3$
6, 8	$(2 + 2) + 3 = 7$
7, 9	$2 + (3 \times 2) = 8$

Beginner 7

Scoring numbers: 2, 3, 4

Gates	Equations
0, 2	$(3 + 2) - 4 = 1$
2, 4	$(4 + 2) - 3 = 3$
4, 6	$(4 + 3) - 2 = 5$
8, 10	$(2 + 3) + 4 = 9$
9, 11	$(4 \times 3) - 2 = 10$

Beginner 8

Scoring numbers: 1, 3, 3

Gates	Equations
0, 2	$(3 + 1) - 3 = 1$
5, 7	$3 \times (3 - 1) = 6$
7, 9	$(3 \times 3) - 1 = 8$
9, 11	$1 + (3 \times 3) = 10$
11, 13	$3 \times (3 + 1) = 12$

Beginner 9

Scoring numbers: 2, 3, 5

Gates	Equations
0, 2	$(3 \times 2) - 5 = 1$
4, 6	$5 \times (3 - 2) = 5$
5, 7	$(5 + 3) - 2 = 6$
8, 10	$3 \times (5 - 2) = 9$
12, 14	$(5 \times 3) - 2 = 13$

Beginner 10

Scoring numbers: 2, 4, 6

Gates	Equations
1, 3	$(4 \times 2) - 6 = 2$
3, 5	$(6 + 2) - 4 = 4$
7, 9	$(6 + 4) - 2 = 8$
11, 13	$(2 + 4) + 6 = 12$
15, 17	$4 \times (6 - 2) = 16$

Beginner 11

Scoring numbers: 2, 3, 4

Gates	Equations
0, 2	$(3 + 2) - 4 = 1$
1, 3	$2 \times (4 - 3) = 2$
3, 5	$4 \times (3 - 2) = 4$
5, 7	$3 \times (4 - 2) = 6$
13, 15	$2 \times (4 + 3) = 14$

Beginner 12

Scoring numbers: 4, 4, 6

Gates	Equations
1, 3	$(4 + 4) - 6 = 2$
5, 7	$(6 + 4) - 4 = 6$
7, 9	$4 \times (6 - 4) = 8$
9, 11	$(4 \times 4) - 6 = 10$
13, 15	$(4 + 4) + 6 = 14$

Intermediate 1

Scoring numbers: 2, 4, 5

Gates	Equations
1, 3	$2 - (4 \div 5) = 1.2$
	$4 \div (5 - 2) \approx 1.3333$
	$4 - (5 \div 2) = 1.5$
	$(4 \times 2) \div 5 = 1.6$
	$(5 + 2) \div 4 = 1.75$
	$2 \times (5 - 4) = 2$
	$5 \div (4 - 2) = 2.5$
	$2 + (4 \div 5) = 2.8$
7, 11	$5 \times (4 - 2) = 10$
15, 20	$2 \times (5 + 4) = 18$
23, 29	$4 \times (5 + 2) = 28$
28, 36	$5 \times (4 + 2) = 30$

Intermediate 2

Scoring numbers: 2, 4, 4

Gates	Equations
3, 6	$4 - (2 \div 4) = 3.5$
	$(4 \times 2) - 4 = 4$
	$4 + (2 \div 4) = 4.5$
6, 9	$4 \times (4 - 2) = 8$
10, 14	$4 + (4 \times 2) = 12$
14, 18	$2 \times (4 + 4) = 16$
20, 25	$4 \times (4 + 2) = 24$

Intermediate 3

Scoring numbers: 3, 3, 6

Gates	Equations
0, 3	$3 \div (6 \times 3) \approx 0.1667$
	$3 \div (6 + 3) \approx 0.3333$
	$6 \div (3 \times 3) \approx 0.6667$
	$3 - (6 \div 3) = 1$
	$(3 \times 3) \div 6 = 1.5$
	$3 - (3 \div 6) = 2.5$
5, 7	$(6 + 3) - 3 = 6$
7, 10	$3 \times (6 - 3) = 9$
12, 19	$(6 \times 3) - 3 = 15$
22, 29	$3 \times (6 + 3) = 27$

Intermediate 4

Scoring numbers: 3, 4, 6

Gates	Equations
1, 4	$(4 + 3) \div 6 \approx 1.1667$
	$4 \div (6 - 3) \approx 1.3333$
	$3 \div (6 - 4) = 1.5$
	$4 - (6 \div 3) = 2$
	$(6 + 3) \div 4 = 2.25$
	$3 - (4 \div 6) \approx 2.3333$
	$(6 + 4) \div 3 \approx 3.3333$
	$4 - (3 \div 6) = 3.5$
	$3 + (4 \div 6) \approx 3.6667$
5, 7	$6 - (3 \div 4) = 5.25$
	$3 \times (6 - 4) = 6$
	$6 + (3 \div 4) = 6.75$
7, 11	$6 + (4 \div 3) \approx 7.3333$
	$(6 \times 4) \div 3 = 8$
9, 13	$4 \times (6 - 3) = 12$
13, 18	$(6 \times 3) - 4 = 14$

Intermediate 5

Scoring numbers: 3, 5, 6

Gates	Equations
2, 4	$3 - (5 \div 6) \approx 2.1667$
	$(5 \times 3) \div 6 = 2.5$
	$3 \times (6 - 5) = 3$
	$(6 \times 3) \div 5 = 3.6$
	$(6 + 5) \div 3 \approx 3.6667$
	$3 + (5 \div 6) \approx 3.8333$
6, 8	$6 + (3 \div 5) = 6.6$
	$5 + (6 \div 3) = 7$
	$6 + (5 \div 3) \approx 7.6667$
9, 12	$(6 \times 5) \div 3 = 10$
10, 13	$6 \times (5 - 3) = 12$
12, 14	$(6 \times 3) - 5 = 13$

Intermediate 6

Scoring numbers: 2, 5, 6

Gates	Equations
3, 6	$2 + (6 \div 5) = 3.2$
	$6 - (5 \div 2) = 3.5$
	$(5 \times 2) - 6 = 4$
	$5 - (2 \div 6) \approx 4.6667$
	$5 + (2 \div 6) \approx 5.3333$
	$(6 + 5) \div 2 = 5.5$
	$6 - (2 \div 5) = 5.6$
6, 8	$6 + (2 \div 5) = 6.4$
	$(6 \times 2) - 5 = 7$
7, 9	$5 + (6 \div 2) = 8$
	$6 + (5 \div 2) = 8.5$
13, 16	$(6 \times 5) \div 2 = 15$
20, 26	$2 \times (6 + 5) = 22$

Intermediate 7

Scoring numbers: 2, 6, 6

Gates	Equations
3, 8	$6 - (2 \div 6) \approx 5.6667$
	$(6 \times 2) - 6 = 6$
	$6 + (2 \div 6) \approx 6.3333$
7, 10	$6 + (6 \div 2) = 9$
9, 13	$(6 + 6) - 2 = 10$
15, 20	$6 + (6 \times 2) = 18$
20, 30	$6 \times (6 - 2) = 24$

Intermediate 8

Scoring numbers: 4, 5, 5

Gates	Equations
14, 19	$(5 \times 4) - 5 = 15$
20, 24	$(5 \times 5) - 4 = 21$
22, 28	$5 + (5 \times 4) = 25$
40, 50	$5 \times (5 + 4) = 45$
81, 105	$(4 \times 5) \times 5 = 100$

Intermediate 9

Scoring numbers: 4, 6, 6

Gates	Equations
1, 4	$(6 + 4) \div 6 \approx 1.6667$
	$6 \div (6 - 4) = 3$
8, 11	$(6 \times 6) \div 4 = 9$
10, 15	$6 \times (6 - 4) = 12$
16, 21	$(6 \times 4) - 6 = 18$
40, 50	$4 \times (6 + 6) = 48$

Intermediate 10

Scoring numbers: 3, 5, 6

Gates	Equations
14, 17	$5 \times (6 - 3) = 15$
21, 25	$5 + (6 \times 3) = 23$
25, 30	$(6 \times 5) - 3 = 27$
42, 46	$5 \times (6 + 3) = 45$
45, 50	$6 \times (5 + 3) = 48$

Intermediate 11

Scoring numbers: 3, 6, 6

Gates	Equations
0, 3	$3 \div (6 \times 6) \approx 0.0833$
	$3 \div (6 + 6) = 0.25$
	$6 \div (6 \times 3) \approx 0.3333$
	$(6 - 3) \div 6 = 0.5$
	$6 \div (6 + 3) \approx 0.6667$
	$(6 + 3) \div 6 = 1.5$
	$6 \div (6 - 3) = 2$
6, 9	$6 + (3 \div 6) = 6.5$
	$6 + (6 \div 3) = 8$
10, 14	$(6 \times 3) - 6 = 12$
33, 39	$3 \times (6 + 6) = 36$
50, 60	$6 \times (6 + 3) = 54$

Intermediate 12

Scoring numbers: 5, 6, 6

Gates	Equations
6, 10	$6 + (5 \div 6) \approx 6.8333$
	$(6 + 6) - 5 = 7$
	$6 + (6 \div 5) = 7.2$
25, 32	$(6 \times 6) - 5 = 31$
33, 38	$6 + (6 \times 5) = 36$
55, 65	$5 \times (6 + 6) = 60$
63, 73	$6 \times (6 + 5) = 66$

Advanced 1

Scoring numbers: 3, 3, 4

Gates	Equations
7, 10	$(4 \times 3) - 3 = 9$
12, 15	$4 + (3 \times 3) = 13$
21, 24	$(4^3) \div 3 \approx 21.3333$ $(3^3) - 4 = 23$
65, 70	$3 + (4^3) = 67$
80, 90	$3 + (3^4) = 84$

Advanced 2

Scoring numbers: 1, 2, 6

Gates	Equations
1, 3	$2^{(1 \div 6)} \approx 1.1225$
	$1 + (2 \div 6) \approx 1.3333$
	$2 - (1 \div 6) \approx 1.8333$
	$6 \div (2 + 1) = 2$
	$2 + (1 \div 6) \approx 2.1667$
	$6^{(1 \div 2)} \approx 2.4495$
	$(6 - 1) \div 2 = 2.5$
9, 11	$2 \times (6 - 1) = 10$
21, 26	$(6 - 1)^2 = 25$
30, 34	$2^{(6-1)} = 32$
33, 36	$(6^2) - 1 = 35$

Advanced 3

Scoring numbers: 1, 3, 5

Gates	Equations
4, 6	$5 - (1 \div 3) \approx 4.6667$
	$5 \div (1^3) = 5$
	$5 + (1 \div 3) \approx 5.3333$
11, 14	$3 \times (5 - 1) = 12$
21, 28	$5^{(3-1)} = 25$
31, 36	$(3 - 1)^5 = 32$
60, 70	$(5 - 1)^3 = 64$

Advanced 4

Scoring numbers: 2, 2, 6

Gates	Equations
0, 2	$2 \div (2^6) \approx 0.0313$
	$2 \div (6^2) \approx 0.0556$
	$2^{(2-6)} = 0.0625$
	$(2 \div 6)^2 \approx 0.1111$
	$2 \div (6 \times 2) \approx 0.1667$
	$2 \div (6 + 2) = 0.25$
	$2 \div (6 - 2) = 0.5$
	$(2 + 2) \div 6 \approx 0.6667$
	$(6 \div 2) - 2 = 1$
	$2^{(2 \div 6)} \approx 1.2599$
	$6 \div (2 + 2) = 1.5$
	$2 - (2 \div 6) \approx 1.6667$
	8, 10
14, 18	$2 \times (6 + 2) = 16$
32, 37	$(6^2) - 2 = 34$
62, 66	$(6 + 2)^2 = 64$

Advanced 5

Scoring numbers: 4, 5, 6

Gates	Equations
6, 9	$5 + (6 \div 4) = 6.5$
	$6 + (4 \div 5) = 6.8$
	$(6 + 5) - 4 = 7$
	$6 + (5 \div 4) = 7.25$
	$(6 \times 5) \div 4 = 7.5$
	$(6 \div 4)^5 \approx 7.5938$
12, 15	$(5 \times 4) - 6 = 14$
20, 26	$5^{(6-4)} = 25$
30, 34	$(6 - 4)^5 = 32$
50, 60	$6 \times (5 + 4) = 54$

Advanced 6

Scoring numbers: 2, 3, 5

Gates	Equations
13, 16	$5 + (3^2) = 14$
	$3^{(5 \div 2)} \approx 15.5885$
	$(5 \div 2)^3 = 15.625$
21, 24	$(5^2) - 3 = 22$
26, 28	$3^{(5-2)} = 27$
32, 38	$3 + (2^5) = 35$
70, 80	$3 \times (5^2) = 75$

Advanced 7

Scoring numbers: 2, 5, 5

Gates	Equations
6, 11	$(2^5) \div 5 = 6.4$
	$5 + (5 \div 2) = 7.5$
	$(5 + 5) - 2 = 8$
12, 16	$(5 \times 5) \div 2 = 12.5$
	$5 \times (5 - 2) = 15$
17, 23	$2 \times (5 + 5) = 20$
25, 30	$2 + (5 \times 5) = 27$
35, 42	$5 + (2^5) = 37$

Advanced 8

Scoring numbers: 3, 4, 5

Gates	Equations	
0, 2	$3 \div (4^5) \approx 0.0029$	
	$3 \div (5^4) = 0.0048$	
	$4 \div (3^5) \approx 0.0165$	
	$4 \div (5^3) = 0.032$	
	$5 \div (3^4) \approx 0.0617$	
	$4^{(3-5)} = 0.0625$	
	$5 \div (4^3) \approx 0.0781$	
	$(3 \div 5)^4 = 0.1296$	
	$3 \div (5 \times 4) = 0.15$	
	$(4 - 3) \div 5 = 0.2$	
	$(3 \div 4)^5 \approx 0.2373$	
	$4 \div (5 \times 3) \approx 0.2667$	
	$3 \div (5 + 4) \approx 0.3333$	
	$5 \div (4 \times 3) \approx 0.4167$	
	$4 \div (5 + 3) = 0.5$	
	$(4 \div 5)^3 = 0.512$	
	$5 \div (4 + 3) \approx 0.7143$	
	$(5 - 4)^3 = 1$	
	$(4 + 3) \div 5 = 1.4$	
	$3 - (5 \div 4) = 1.75$	
	$(5 \div 4)^3 \approx 1.9531$	
	6, 8	$5 + (4 \div 3) \approx 6.3333$
		$(5 \times 4) \div 3 \approx 6.6667$
		$(4 \times 3) - 5 = 7$
		$(5 \div 3)^4 \approx 7.7160$
	14, 17	$4^{(5-3)} = 16$
		$(3^4) \div 5 = 16.2$
25, 30	$3 \times (5 + 4) = 27$	
81, 89	$5 + (3^4) = 86$	

Advanced 9

Scoring numbers: 2, 3, 4

Gates	Equations
1, 3	$2 - (3 \div 4) = 1.25$
	$3 \div (4 - 2) = 1.5$
	$2^{(3 \div 4)} \approx 1.6818$
	$3^{(2 \div 4)} \approx 1.7321$
	$(4 \div 3)^2 \approx 1.7778$
	$2 \times (4 - 3) = 2$
	$(3^2) \div 4 = 2.25$
	$4 - (3 \div 2) = 2.5$
	$4^{(2 \div 3)} \approx 2.5198$
	$(4 \times 2) \div 3 \approx 2.6667$
$2 + (3 \div 4) = 2.75$	
10, 12	$3 + (4 \times 2) = 11$
11, 13	$4 + (2^3) = 12$
12, 14	$(4^2) - 3 = 13$
18, 20	$3 + (4^2) = 19$

Advanced 10

Scoring numbers: 1, 2, 3

Gates	Equations
7, 9	$2 \times (3 + 1) = 8$
8, 10	$3 \times (2 + 1) = 9$
9, 14	$1 + (3^2) = 10$
13, 17	$2^{(3+1)} = 16$
25, 30	$3^{(2+1)} = 27$

Advanced 11

Scoring numbers: 2, 4, 5

Gates	Equations
11, 13	$4 \times (5 - 2) = 12$
13, 16	$4 + (5 \times 2) = 14$
18, 22	$(5^2) - 4 = 21$
28, 30	$4 + (5^2) = 29$
80, 85	$(5 - 2)^4 = 81$

Advanced 12

Scoring numbers: 3, 4, 6

Gates	Equations	
0, 2	$3 \div (4^6) \approx 0.0007$	
	$3 \div (6^4) \approx 0.0023$	
	$4 \div (3^6) \approx 0.0055$	
	$4^{(3-6)} \approx 0.0156$	
	$4 \div (6^3) \approx 0.0185$	
	$(3 \div 6)^4 = 0.0625$	
	$6 \div (3^4) \approx 0.0741$	
	$6 \div (4^3) \approx 0.0938$	
	$3^{(4-6)} \approx 0.1111$	
	$3 \div (6 \times 4) = 0.125$	
	$(4 - 3) \div 6 \approx 0.1667$	
	$(3 \div 4)^6 \approx 0.1780$	
	$4 \div (6 \times 3) \approx 0.2222$	
	$(4 \div 6)^3 \approx 0.2963$	
	$3 \div (6 + 4) = 0.3$	
	$4 \div (6 + 3) \approx 0.4444$	
	$6 \div (4 \times 3) = 0.5$	
	$(6 - 4) \div 3 \approx 0.6667$	
	$(6 - 3) \div 4 = 0.75$	
	$6 \div (4 + 3) \approx 0.8571$	
	$(4 + 3) - 6 = 1$	
	$(4 + 3) \div 6 \approx 1.1667$	
	$4 \div (6 - 3) \approx 1.3333$	
	$3 \div (6 - 4) = 1.5$	
	8, 10	$3^{(6-4)} = 9$
	16, 20	$6 + (4 \times 3) = 18$
	34, 39	$4 \times (6 + 3) = 36$
	62, 66	$4^{(6-3)} = 64$