Sprint 1: Rewrite each item as an equivalent expression in exponential notation. All letters denote numbers.

1.	$2^2 \cdot 2^3 =$
2.	$2^2 \cdot 2^4 =$
3.	$2^2 \cdot 2^5 =$
4.	$3^7 \cdot 3^1 =$
5.	$3^8 \cdot 3^1 =$
6.	$3^9 \cdot 3^1 =$
7.	$7^6 \cdot 7^2 =$
8.	$7^6 \cdot 7^3 =$
9.	$7^6 \cdot 7^4 =$
10.	$11^{15} \cdot 11 =$
11.	$11^{16} \cdot 11 =$
12.	$2^{12} \cdot 2^2 =$
13.	$2^{12} \cdot 2^4 =$
14.	$2^{12} \cdot 2^6 =$
15.	$99^5 \cdot 99^2 =$
16.	$99^6 \cdot 99^3 =$
17.	$99^7 \cdot 99^4 =$
18.	$5^8 \cdot 5^2 =$
19.	$6^8 \cdot 6^2 =$
20.	$7^8 \cdot 7^2 =$
21.	$r^8 \cdot r^2 =$
22.	$s^8 \cdot s^2 =$

23.	$6^3 \cdot 6^2 =$
24.	$6^2 \cdot 6^3 =$
25.	$(-8)^3 \cdot (-8)^7 =$
26.	$(-8)^7 \cdot (-8)^3 =$
27.	$(0.2)^3 \cdot (0.2)^7 =$
28.	$(0.2)^7 \cdot (0.2)^3 =$
29.	$(-2)^{12} \cdot (-2)^1 =$
30.	$(-2.7)^{12} \cdot (-2.7)^1 =$
31.	$1.1^6 \cdot 1.1^9 =$
32.	$57^6 \cdot 57^9 =$
33.	$x^6 \cdot x^9 =$
34.	$2^8 \cdot 4 =$
35.	$2^8 \cdot 4^2 =$
36.	$2^8 \cdot 16 =$
37.	$16 \cdot 4^3 =$
38.	$3^2 \cdot 9 =$
39.	$3^2 \cdot 27 =$
40.	$3^2 \cdot 81 =$
41.	$5^4 \cdot 25 =$
42.	$5^4 \cdot 125 =$
43.	$8 \cdot 2^{10} =$
44.	$16 \cdot 2^{10} =$

Sprint 2: Rewrite each item as an equivalent expression in exponential notation. All letters denote numbers.

1.	$5^2 \cdot 5^3 =$
2.	$5^2 \cdot 5^4 =$
3.	$5^2 \cdot 5^5 =$
4.	$2^7 \cdot 2^1 =$
5.	$2^8 \cdot 2^1 =$
6.	$2^9 \cdot 2^1 =$
7.	$4^6 \cdot 4^2 =$
8.	$4^6 \cdot 4^3 =$
9.	$4^6 \cdot 4^4 =$
10.	$8^{15} \cdot 8 =$
11.	$8^{16} \cdot 8 =$
12.	$9^{12} \cdot 9^2 =$
13.	$9^{12} \cdot 9^4 =$
14.	$9^{12} \cdot 9^6 =$
15.	$23^5 \cdot 23^2 =$
16.	$23^6 \cdot 23^3 =$
17.	$23^7 \cdot 23^4 =$
18.	$14^7 \cdot 14^3 =$
19.	$15^7 \cdot 15^3 =$
20.	$16^7 \cdot 16^3 =$
21.	$x^7 \cdot x^3 =$
22.	$y^7 \cdot y^3 =$

23.	$7^3 \cdot 7^2 =$
24.	$7^2 \cdot 7^3 =$
25.	$(-4)^3 \cdot (-4)^{11} =$
26.	$(-4)^{11} \cdot (-4)^3 =$
27.	$(0.2)^3 \cdot (0.2)^{11} =$
28.	$(0.2)^{11} \cdot (0.2)^3 =$
29.	$(-2)^9 \cdot (-2)^5 =$
30.	$(-2.7)^5 \cdot (-2.7)^9 =$
31.	$3.1^6 \cdot 3.1^6 =$
32.	$57^6 \cdot 57^6 =$
33.	$z^6 \cdot z^6 =$
34.	$4 \cdot 2^8 =$
35.	$4^2 \cdot 2^8 =$
36.	$16 \cdot 2^8 =$
37.	$16 \cdot 4^2 =$
38.	$9 \cdot 3^2 =$
39.	$3^3 \cdot 9 =$
40.	$3^3 \cdot 27 =$
41.	$5^6 \cdot 25 =$
42.	$5^6 \cdot 125 =$
43.	$2^{10} \cdot 4 =$
44.	$2^{10} \cdot 16 =$

Sprint 1: Simplify each item as much as possible. Answers should have only positive exponents. All letters denote numbers.

1.	$4^5 \cdot 4^{-4} =$
2.	$4^5 \cdot 4^{-3} =$
3.	$4^5 \cdot 4^{-2} =$
4.	$7^{-4} \cdot 7^{11} =$
5.	$7^{-4} \cdot 7^{10} =$
6.	$7^{-4} \cdot 7^{9} =$
7.	$9^{-4} \cdot 9^{-3} =$
8.	$9^{-4} \cdot 9^{-2} =$
9.	$9^{-4} \cdot 9^{-1} =$
10.	$9^{-4} \cdot 9^{0} =$
11.	$5^0 \cdot 5^1 =$
12.	$5^0 \cdot 5^2 =$
13.	$5^0 \cdot 5^3 =$
14.	$(12^3)^9 =$

15.	$(12^3)^{10} =$
16.	$(12^3)^{11} =$
17.	$(7^{-3})^{-8} =$
18.	$(7^{-3})^{-9} =$
19.	$(7^{-3})^{-10} =$
20.	$\left(\frac{1}{2}\right)^9 =$
21.	$\left(\frac{1}{2}\right)^8 =$
22.	$\left(\frac{1}{2}\right)^7 =$
23.	$\left(\frac{1}{2}\right)^6 =$
24.	$(3x)^5 =$
25.	$(3x)^7 =$
26.	$(3x)^9 =$
27.	$(8^{-2})^3 =$
28.	$(8^{-3})^3 =$

29.	$(8^{-4})^3 =$
30.	$(22^0)^{50} =$
31.	$(22^0)^{55} =$
32.	$(22^0)^{60} =$
33.	$\left(\frac{1}{11}\right)^{-5} =$
34.	$\left(\frac{1}{11}\right)^{-6} =$
35.	$\left(\frac{1}{11}\right)^{-7} =$
36.	$\frac{56^{-23}}{56^{-34}} =$

37.	$\frac{87^{-12}}{87^{-34}} =$
38.	$\frac{23^{-15}}{23^{-17}} =$
39.	$(-2)^{-12} \cdot (-2)^1 =$
40.	$\frac{2y}{y^3} =$
41.	$\frac{5xy^7}{15x^7y} =$
42.	$\frac{16x^6y^9}{8x^{-5}y^{-11}} =$
43.	$(2^3 \cdot 4)^{-5} =$
44.	$(9^{-8})(27^{-2}) =$

Sprint 2: Simplify each item as much as possible. Answers should have only positive exponents. All letters denote numbers.

1.	$11^5 \cdot 11^{-4} =$
2.	$11^5 \cdot 11^{-3} =$
3.	$11^5 \cdot 11^{-2} =$
4.	$7^{-7} \cdot 7^9 =$
5.	$7^{-8} \cdot 7^9 =$
6.	$7^{-9} \cdot 7^9 =$
7.	$(-6)^{-4} \cdot (-6)^{-3} =$
8.	$(-6)^{-4} \cdot (-6)^{-2} =$
9.	$(-6)^{-4} \cdot (-6)^{-1} =$
10.	$(-6)^{-4} \cdot (-6)^{0} =$
11.	$x^0 \cdot x^1 =$
12.	$x^0 \cdot x^2 =$
13.	$x^0 \cdot x^3 =$
14.	$(12^5)^9 =$

15.	$(12^6)^9 =$
16.	$(12^7)^9 =$
17.	$(7^{-3})^{-4} =$
18.	$(7^{-4})^{-4} =$
19.	$(7^{-5})^{-4} =$
20.	$\left(\frac{3}{7}\right)^8 =$
21.	$\left(\frac{3}{7}\right)^7 =$
22.	$\left(\frac{3}{7}\right)^6 =$
23.	$\left(\frac{3}{7}\right)^5 =$
24.	$(18xy)^5 =$
25.	$(18xy)^7 =$
26.	$(18xy)^9 =$
27.	$(5.2^{-2})^3 =$
28.	$(5.2^{-3})^3 =$

29.	$(5.2^{-4})^3 =$
30.	$(22^6)^0 =$
31.	$(22^{12})^0 =$
32.	$(22^{18})^0 =$
33.	$\left(\frac{4}{5}\right)^{-5} =$
34.	$\left(\frac{4}{5}\right)^{-6} =$
35.	$\left(\frac{4}{5}\right)^{-7} =$
36.	$\left(\frac{6^{-2}}{7^5}\right)^{-11} =$

37.	$\left(\frac{6^{-2}}{7^5}\right)^{-12} =$
38.	$\left(\frac{6^{-2}}{7^5}\right)^{-13} =$
39.	$\left(\frac{6^{-2}}{7^5}\right)^{-15} =$
40.	$\frac{42ab^{10}}{14a^{-9}b} =$
41.	$\frac{5xy^7}{25x^7y} =$
42.	$\frac{22a^{15}b^{32}}{121ab^{-5}} =$
43.	$(7^{-8} \cdot 49)^{-5} =$
44.	$(36^9)(216^{-2}) =$