Year 6 Worksheet 7 - Exponents

Question 1: Evaluate the following.

2^2 $= 2 \times 2$ $= 4$	3^2	2^3
2^4	5^2	7^2
10^3	4^3	3^4
0^2	1^5	6^2
9^2	8^2	11^2

Question 2: Evaluate the following.

$2^{-3} = \frac{1}{2^3} = \frac{1}{8}$	2^0	3^{-1}
10^{-3}	5^{-2}	1^0
2^{-4}	1^{-3}	100^0
3^{-2}	1^{-5}	9^{-2}
3^{-3}	4^{-3}	7^{-2}

Question 3: Evaluate the following.

$3^2 + 2^3$ $= 9 + 8$ $= 17$	$5^4 - 4^2$	$2^3 \times 2^1$
$6^0 \times 7^2$	$9^1 + 10^0$	$(2^2)^3$
$(-4)^0 \times 6^2$	$3^4 \div 3^2$	$(-5)^2$
$3^3 + 4^2$	$8^3 \div 8^1$	$7^2 - 2$
$(-6)^0 \times 8^2$	$(2^2)^{-3}$	$9^3 \div 9^1$

Question 4: Solve for x.

1	$2^3 + x = 17$
2	$5 - 2^{-3} = x$
3	$\|4x\| = 12$
4	$\frac{8}{x} = 1$
5	$3^2 - 2x = 7$

6	$-6x + (-2)^1 = 10$
7	$\lvert 2^{-3}x \rvert = 1$
8	$3^0 + x = 2$
9	$5x^2 - 25 = 100$
10	$\lvert 4x^2 \rvert = 36$

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Answer Key

Question 1: Evaluate the following.

$2^2 = 4$	$3^2 = 9$	$2^3 = 8$
$2^4 = 16$	$5^2 = 25$	$7^2 = 49$
$10^3 = 1000$	$4^3 = 64$	$3^4 = 81$
$0^2 = 0$	$1^5 = 1$	$6^2 = 36$
$9^2 = 81$	$8^2 = 64$	$11^2 = 121$

Question 2: Evaluate the following.

2^{-3} = 1/8	2^{0} = 1	3^{-1} = 1/3
10^{-3} = 1/1000	5^{-2} = 1/25	1^{0} = 1
2^{-4} = 1/16	1^{-3} = 1	100^{0} = 1
3^{-2} = 1/9	1^{-5} = 1	9^{-2} = 1/81
3^{-3} = 1/27	4^{-3} = 1/64	7^{-2} = 1/49

Question 3: Evaluate the following.

$3^2 + 2^3 = 17$	$5^4 - 4^2 = 609$	$2^3 \times 2^1 = 16$
$6^0 \times 7^2 = 49$	$9^1 + 10^0 = 10$	$(2^2)^3 = 64$
$(-4)^0 \times 6^2 = 36$	$3^4 \div 3^2 = 9$	$(-5)^2 = 25$
$3^3 + 4^2 = 43$	$8^3 \div 8^1 = 64$	$7^2 - 2 = 47$
$(-6)^0 \times 8^2 = 64$	$(2^2)^{-3} = 1/64$	$9^3 \div 9^1 = 81$

Question 4: Solve for x.

1	Answer: x=17−8=9
2	Answer: x= 39/8
3	Answer: x=+/-3
4	Answer: x=8
5	Answer: x=1
6	Answer: x=-2
7	Answer: x=+/-8
8	Answer: x=1
9	Answer: x=5
10	Answer: x=+/- 3