ORDER OF OPERATIONS PRACTICE

Solve the following problems by using the correct order of operations.
(Parentheses/brackets, exponents, multiplication & division, addition & subtraction)

Level 1:

1) $3 \times 7 - 1$
2) $2 \times (7 - 2) + 3$
3) $(7 \times 2 - 1) \times 3$
4) $(12 - 2 \times 4) \div 2$
5) $2 + (6 \div 3 \times 8)$

Level 2:

1) $-2(7 - 4^2)$
2) $\left(2^3 - (5 - 2)\right)^2$
3) $(9 - 1)^2 - 5^2 \times 2$
4) $6[-3(3 - 6)^2]$
5) $120 \div (9 - 3 \times 2^2)$

Level 3:

1) $3(3 \times 8 + 3)^{\frac{1}{3}}$
2) $2 \times ((5 - 3)^3 - 3)^2$
3) $\frac{33 - 3^3}{8 - 6 \div 3}$
4) $3\sqrt{(2^3 - 4)^2 - 12}$
5) $108 \div (9 - 3 \times 2^2)^2$

ORDER OF OPERATIONS PRACTICE

SOLUTIONS:

Level 1:

1) $3 \times 7 - 1$
$= 21 - 1 = 20$

2) $2 \times (7 - 2) + 3$
$= 2 \times 5 + 3$
$= 10 + 3 = 13$

3) $(7 \times 2 - 1) \times 3$
$= (14 - 1) \times 3$
$= 13 \times 3 = 39$

4) $(12 - 2 \times 4) \div 2$
$= (12 - 8) \div 2$
$= 4 \div 2 = 2$

5) $2 + (6 \div 3 \times 8)$
$= 2 + (2 \times 8)$
$= 2 + 16 = 18$

Level 2:

1) $-2(7 - 4^2)$
$= -2(7 - 16)$
$= -2 \times (-9) = 18$

2) $\left(2^3 - (5 - 2)\right)^2$
$= (2^3 - 3)^2$
$= (8 - 3)^2$
$= 5^2 = 25$

3) $(9 - 1)^2 - 5^2 \times 2$
$= 8^2 - 5^2 \times 2$
$= 64 - 25 \times 2$
$= 64 - 50 = 14$

4) $6[-3(3 - 6)^2]$
$= 6[-3(-3)^2]$
$= 6[-3 \times 9]$
$= 6 \times (-27) = -162$

5) $120 \div (9 - 3 \times 2^2)$
$= 120 \div (9 - 3 \times 4)$
$= 120 \div (9 - 12)$
$= 120 \div (-3) = -40$

ORDER OF OPERATIONS PRACTICE

Level 3:

1) $3(3 \times 8 + 3)^{\frac{1}{3}}$
$= 3(24 + 3)^{\frac{1}{3}}$
$= 3(27)^{\frac{1}{3}} = 3 \times \sqrt[3]{27}$
$= 3 \times 3 = 9$

2) $= 2 \times ((5 - 3)^3 - 3)^2$
$= 2 \times (2^3 - 3)^2$
$= 2 \times (8 - 3)^2$
$= 2 \times 5^2$
$= 2 \times 25 = 50$

3) $\frac{33-3^3}{8-6\div 3}$
$= \dfrac{33 - 27}{8 - 6 \div 3}$
$= \dfrac{33 - 27}{8 - 2}$
$= \dfrac{6}{6} = 1$

4) $3\sqrt{(2^3 - 4)^2 - 12}$
$= 3((2^3 - 4)^2 - 12)^{\frac{1}{2}}$
$= 3((8 - 4)^2 - 12)^{\frac{1}{2}}$
$= 3(4^2 - 12)^{\frac{1}{2}}$
$= 3(16 - 12)^{\frac{1}{2}}$
$= 3(4)^{\frac{1}{2}} = 3\sqrt{4}$
$= 3 \times 2 = 6$

5) $108 \div (9 - 3 \times 2^2)^2$
$= 108 \div (9 - 3 \times 4)^2$
$= 108 \div (9 - 12)^2$
$= 108 \div (-3)^2$
$= 108 \div 9 = 12$