SmartMathz

Order of Operations (involving the four arithmetic operations and parenthesis)

Grade 6 Expressions & Equations Worksheet

Date:_____   Name:_____

Evaluate each expression using order of operations (**PEMDAS**).

Note: **MD** (Multiplication and Division is from Left to Right); **AS** (Addition and Subtraction is from Left to Right)

1. $-3(1 \times 4 - 2 \div 2) + (6 + 2 - 3) = \boxed{}$

Workings:

2. $(7 + 3 - 4) + 4(16 \div 4 \times 2) = \boxed{}$

Workings:

3. $(8 - 5) + 2(5 \times 4) - 6 = \boxed{}$

Workings:

4. $-1(2 \times 5 - 3 \div 3) + (7 + 3 - 4) = \boxed{}$

Workings:

5. $(8 + 4 - 5) + 5(18 \div 3 \times 2) = \boxed{}$

Workings:

Order of Operations (involving the four arithmetic operations and parenthesis)

Grade 6 Expressions & Equations Answer Sheet

1. $-3(1 \times 4 - 2 \div 2) + (6 + 2 - 3) = \boxed{-4}$

Workings:

$-3(1 \times 4 - 2 \div 2) + (6 + 2 - 3)$ First, simplify the parenthesis $1 \times 4 = 4$

$= -3(4 - 2 \div 2) + (6 + 2 - 3)$ Again, simplify the parenthesis $2 \div 2 = 1$

$= -3(4 - 1) + (6 + 2 - 3)$ Again, simplify the parenthesis $4 - 1 = 3$

$= -3(3) + (6 + 2 - 3)$ Next, multiply $-3 \times 3 = -9$

$= -9 + (6 + 2 - 3)$ Now, simplify the parenthesis $6 + 2 = 8$

$= -9 + (8 - 3)$ Again, simplify the parenthesis $8 - 3 = 5$

$= -9 + 5$ Finally, add $-9 + 5 = -4$

$= \textbf{-4}$ ✔

2. $(7 + 3 - 4) + 4(16 \div 4 \times 2) = \boxed{38}$

Workings:

$(7 + 3 - 4) + 4(16 \div 4 \times 2)$ First, simplify the parenthesis $7 + 3 = 10$

$= (10 - 4) + 4(16 \div 4 \times 2)$ Again, simplify the parenthesis $10 - 4 = 6$

$= 6 + 4(16 \div 4 \times 2)$ Now, simplify the parenthesis $16 \div 4 = 4$

$= 6 + 4(4 \times 2)$ Next, simplify the parenthesis $4 \times 2 = 8$

$= 6 + 4(8)$ Then, multiply $4 \times 8 = 32$

$= 6 + 32$ Finally, add $6 + 32 = 38$

$= \textbf{38}$ ✔

3. $(8 - 5) + 2(5 \times 4) - 6 = \boxed{37}$

Workings:

$(8 - 5) + 2(5 \times 4) - 6$ First, simplify the parenthesis $8 - 5 = 3$

$= 3 + 2(5 \times 4) - 6$ Again, simplify the parenthesis $5 \times 4 = 20$

$= 3 + 2(20) - 6$ Next, multiply $2 \times 20 = 40$

$= 3 + 40 - 6$ Then, add $3 + 40 = 43$

$= 43 - 6$ Finally, subtract $43 - 6 = 37$

$= \textbf{37}$ ✔

4. $-1(2 \times 5 - 3 \div 3) + (7 + 3 - 4) =$ **-3**

Workings:

$-1(2 \times 5 - 3 \div 3) + (7 + 3 - 4)$ Simplify the parenthesis $2 \times 5 = 10$

$= -1(10 - 3 \div 3) + (7 + 3 - 4)$ Simplify the parenthesis $3 \div 3 = 1$

$= -1(10 - 1) + (7 + 3 - 4)$ Next, simplify the parenthesis $10 - 1 = 9$

$= -1(9) + (7 + 3 - 4)$ Then, multiply $-1 \times 9 = -9$

$= -9 + (7 + 3 - 4)$ Next, simplify the parenthesis $7 + 3 = 10$

$= -9 + (10 - 4)$ Next, simplify the parenthesis $10 - 4 = 6$

$= -9 + 6$ Finally, add $-9 + 6 = -3$

$= $ **-3** ✓

5. $(8 + 4 - 5) + 5(18 \div 3 \times 2) =$ **67**

Workings:

$(8 + 4 - 5) + 5(18 \div 3 \times 2)$ First, simplify the parenthesis $8 + 4 = 12$

$= (12 - 5) + 5(18 \div 3 \times 2)$ Again, simplify the parenthesis $12 - 5 = 7$

$= 7 + 5(18 \div 3 \times 2)$ Now, simplify the parenthesis $18 \div 3 = 6$

$= 7 + 5(6 \times 2)$ Then, simplify the parenthesis $6 \times 2 = 12$

$= 7 + 5(12)$ Next, multiply $5 \times 12 = 60$

$= 7 + 60$ Finally, add $7 + 60 = 67$

$= $ **67** ✓