

Boost Free Lessons - Year 7 Maths

Lesson 1: Order of Operations

Name: _____ Grade: _____ Date: _____

Worked Example 1

Evaluate $12 + 4 \times 5$

1. Check for brackets. There are none.
2. Check for indices (powers). There are none.
3. Multiplication and division come before addition and subtraction, so do $4 \times 5 = 20$ first.
4. Now finish the addition: $12 + 20$.

= 32

Worked Example 2

Evaluate $3 \times (8 - 2)^2 \div 9$

1. Brackets first: $8 - 2 = 6$, giving $3 \times 6^2 \div 9$.
2. Indices next: $6^2 = 36$, giving $3 \times 36 \div 9$.
3. Multiplication and division are equal in rank, so work left to right: $3 \times 36 = 108$.
4. Then $108 \div 9$.

= 12

Remember: Work in this order: **B**rackets, **I**ndices, **D**ivision and **M**ultiplication (left to right), then **A**ddition and **S**ubtraction (left to right).



Question 1: Evaluate the following.

1. $6 + 3 \times 4$

2. $20 - 12 \div 4$

3. $5 \times 2 + 7$

4. $18 \div 3 - 2$

5. $9 + 6 \div 2$

6. $4 \times 5 - 3 \times 2$

7. $30 - 4 \times 6$

8. $7 \times 3 + 8 \div 4$

9. $100 \div 10 \times 5$

10. $24 \div 6 + 9 \times 2$



Question 2: Evaluate the following.

1. $(7 + 3) \times 4$

2. $5 \times (12 - 8)$

3. $(15 - 6) \div 3$

4. $2^3 + 5$

5. $4^2 - 9$

6. $(2 + 3)^2$

7. $6 + 2 \times 3^2$

8. $(18 \div 3)^2 \div 4$

9. $3 \times (4 + 5) - 10$

10. $50 - (3 + 2)^2$



Question 3: Answer the following questions.

1. Mia buys 3 notebooks at \$4 each and one pen for \$2. Write this as a single number sentence and find the total.
2. A tutor has 24 pencils. She gives 6 pencils to each of 3 students, then buys 10 more. How many pencils does she have now?
3. Find the value of $5 + 2 \times (9 - 4)$.
4. Jack says $8 + 4 \times 2 = 24$. Explain his mistake and give the correct answer.
5. A rectangular garden is 7 m by 4 m. A pond measuring 3 m by 2 m is dug inside it. Write a single number sentence for the remaining garden area and evaluate it.





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Answers : Order of Operations**Question 1**

- | | |
|-------|--------|
| 1. 18 | 6. 14 |
| 2. 17 | 7. 6 |
| 3. 17 | 8. 23 |
| 4. 4 | 9. 50 |
| 5. 12 | 10. 22 |

Question 2

- | | |
|-------|--------|
| 1. 40 | 6. 25 |
| 2. 20 | 7. 24 |
| 3. 3 | 8. 9 |
| 4. 13 | 9. 17 |
| 5. 7 | 10. 25 |

Question 3

1. $3 \times 4 + 2 = \$14$
2. $24 - 6 \times 3 + 10 = 16$ pencils
3. 15
4. He added before multiplying. Multiplication comes first: $8 + 8 = 16$.
5. $7 \times 4 - 3 \times 2 = 22 \text{ m}^2$

