

# MATH 01 - Arithmetic, Version D01

First test. Time allowed: one hour. Professor Luis Fernández

NAME: \_\_\_\_\_

**INSTRUCTIONS:** Solve the following 26 exercises. Each is worth 4 points. **You must show all your work** in order to receive any credit. This includes all **sums, long divisions**, etc.

1. Add:  $112 + 242$

**Solution:**

$$\begin{array}{r} 112 \\ + 242 \\ \hline 354 \end{array}$$

2. Add:  $8257 + 3286$

**Solution:**

$$\begin{array}{r} 11 \\ 8257 \\ + 3286 \\ \hline 11543 \end{array}$$

3. Subtract:  $8757 - 5321$

**Solution:**

$$\begin{array}{r} 8757 \\ - 5321 \\ \hline 3436 \end{array}$$

4. Subtract:  $657 - 489$

**Solution:**

$$\begin{array}{r} 657 \\ - 489 \\ \hline 168 \end{array}$$

5. Multiply:  $23 \times 53$

**Solution:**

$$\begin{array}{r} 23 \\ \times 53 \\ \hline 69 \\ 115 \\ \hline 1219 \end{array}$$

6. Multiply:  $234 \times 102$

**Solution:**

$$\begin{array}{r} 234 \\ \times 102 \\ \hline 468 \\ 234 \\ \hline 23868 \end{array}$$

7. Divide, finding the quotient and remainder:

$$45 \div 8$$

**Solution:**

$$\begin{array}{r} 5 \\ 8 \overline{)45} \\ \underline{40} \\ 5 \end{array}$$

Quotient: 5. Remainder: 5.

8. Divide, finding the quotient and remainder:

$$759 \div 31$$

**Solution:**

$$\begin{array}{r} 24 \\ 31 \overline{)759} \\ \underline{620} \\ 139 \\ \underline{124} \\ 15 \end{array}$$

Quotient: 24. Remainder: 15.

9. Divide:  $0 \div 16 =$  (circle the right answer below):

a) 0

b) Undefined

c) 1

d) 16

10. Divide:  $32 \div 0 =$  (circle the right answer below):

a) 0

b) Undefined

c) 32

d) 1

11. Find the value of the following expression:

$$6 + 4 \times 5$$

**Solution:**  $6 + 4 \times 5 = 6 + 20 = 26$

12. Find the value of the following expression:

$$4 \cdot 7 + 3 \cdot 4$$

**Solution:**  $4 \cdot 7 + 3 \cdot 4 = 28 + 12 = 40$

13. Find the value of the following expression:

$$4 + (-7) - 3 - (-5) + 8$$

**Solution:** Change subtraction to addition of the opposite and proceed left to right:

$$\begin{aligned} 4 + (-7) - 3 - (-5) + 8 &= 4 + (-7) + (-3) + 5 + 8 \\ &= (-3) + (-3) + 5 + 8 \\ &= (-6) + 5 + 8 \\ &= (-1) + 8 = 7 \end{aligned}$$

14. Find the value of the following expression:

$$2 \times 3^2 - (6 + 2) \times 3 - (8 \div 4 + 1)$$

**Solution:**

$$\begin{aligned} 2 \times 3^2 - (6 + 2) \times 3 - (8 \div 4 + 1) \\ &= 2 \times 9 - 8 \times 3 - (2 + 1) \\ &= 18 - 24 - 3 \\ &= 18 + (-24) + (-3) \\ &= (-9) \end{aligned}$$

15. Add:  $(-7) + 15$

**Solution:**  $(-7) + 15 = 8$

16. Add:  $(-12) + (-7)$

**Solution:**  $(-12) + (-7) = (-19)$

17. Subtract:  $(-12) - (-9)$

**Solution:**  $(-12) - (-9) = (-12) + 9 = -3$

18. Subtract:  $(-31) - 46$

**Solution:**  $(-31) - 46 = (-31) + (-46) = (-77)$

19. Multiply:  $(-6) \cdot (-9)$

**Solution:**  $(-6) \cdot (-9) = 54$

20. Multiply:  $(-33) \cdot 5$

**Solution:**  $(-33) \cdot 5 = -165$

21. Divide:  $(-12) \div (-4)$

**Solution:**  $(-12) \div (-4) = 3$

22. Divide:  $72 \div (-18)$

**Solution:**  $72 \div (-18) = (-4)$

23. Find the value of  $|-23|$

**Solution:**  $|-23| = 23$

24. Find the value of  $|5 - |-7||$

**Solution:**  $|5 - |-7|| = |5 - 7| = |-2| = 2$

25. Evaluate  $[18 \div (9 \div 3)]^2$

**Solution:**  $[18 \div (9 \div 3)]^2 = [18 \div 3]^2 = [6]^2 = 36$

26. Find the value of  $2 \cdot 5 \cdot 10 \div 5 + 3$

**Solution:**  $2 \cdot 5 \cdot 10 \div 5 + 3 = 10 \cdot 10 \div 5 + 3 = 100 \div 5 + 3 = 20 + 3 = 23$