Truth values and truth tables worksheet – Grade 10

Grade 10 · Mixed level · 20 questions · **Version X1869**

Name: _____ Date: _____ Score: ___ / 20

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1. Let p be "100 cm is one metre". Is NOT p true or false?
   A. True **B.** False

2. Let p be "10 is less than 4" and q be "every month has at least 28 days". Is p AND q true or false?
   A. True **B.** False

3. Let p be "2 + 3 = 5" and q be "10 is less than 4". Is p OR q true or false?
   A. True **B.** False

4. Let p be "10 is less than 4". Is NOT p true or false?
   A. True **B.** False

5. Let p be "half of 12 is 7" and q be "100 cm is one metre". Is p OR q true or false?
   A. True **B.** False

6. Let p be "a week has 8 days" and q be "half of 12 is 7". Is p OR q true or false?
   A. True **B.** False

7. Let p be "half of 12 is 7" and q be "a square has four sides". Is p AND q true or false?
   A. True **B.** False

8. Let p be "a week has 8 days" and q be "a triangle has four sides". Is NOT (p OR q) true or false?
   A. True **B.** False

9. Let p be "10 is less than 4" and q be "every month has at least 28 days". Is "if p, then q" true or false?
   A. True **B.** False

10. Let p be "half of 12 is 7" and q be "100 cm is one metre". Is (NOT p) OR q true or false?
    A. True **B.** False

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11. Let p be "100 cm is one metre" and q be "every month has at least 28 days". Is NOT (p OR q) true or false?

    A. True **B.** False

12. Let p be "10 is less than 4" and q be "2 + 3 = 5". Is NOT (p OR q) true or false?

    A. True **B.** False

13. Let p be "a week has 8 days" and q be "half of 12 is 7". Is p AND (NOT q) true or false?

    A. True **B.** False

14. Let p be "2 + 3 = 5" and q be "a week has 8 days". Is NOT (p OR q) true or false?

    A. True **B.** False

15. Which is logically the same as NOT (p AND q)?

    A. NOT p AND q **B.** (NOT p) AND (NOT q) **C.** (NOT p) OR (NOT q) **D.** p OR q

16. If p is True and q is True, what is NOT (p AND q)?

    A. True **B.** False

17. If p is False and q is True, what is (NOT p) OR (NOT q)?

    A. True **B.** False

18. In how many of the four rows of a truth table is (p AND q) OR (NOT p) true?

    A. 0 **B.** 1 **C.** 2 **D.** 3 **E.** 4

19. "Not (it is sunny and warm)" means the same as which statement?

    A. It is not sunny, or it is not warm **B.** It is sunny but not warm **C.** It is sunny or warm **D.** It is not sunny and it is not warm

20. If p is False and q is True, what is NOT p AND NOT q?

    A. True **B.** False

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Answer key · Version X1869

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1. **B (False)**
2. **B (False)**
3. **A (True)**
4. **A (True)**
5. **A (True)**
6. **B (False)**
7. **B (False)**
8. **A (True)**
9. **A (True)**
10. **A (True)**
11. **B (False)**
12. **B (False)**
13. **B (False)**
14. **B (False)**
15. **C ((NOT p) OR (NOT q))**
16. **B (False)**
17. **A (True)**
18. **D (3)**
19. **A (It is not sunny, or it is not warm)**
20. **B (False)**

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