

MATHEMATICS ASSESSMENT EXAM

Sample test for BBA, BIE and PPLE | 12 questions | 15 minutes

Algebra

1. Expand and simplify: $(5x - 1)(4x - 4)$

- A. $20x^2 - 24x - 4$
- B. $20x^2 - 16x + 4$
- C. $20x^2 - 26x + 4$
- D. $20x^2 - 24x + 4$

2. Simplify, assuming $t \neq \pm 3$: $(3t - 9)/(t^2 - 9)$

- A. $t/(t - 3)$
- B. $1/(t + 3)$
- C. $3/(t + 3)$
- D. $3/(t - 3)$

Equations

3. Solve the equation: $\sqrt{y + 7} = 8$

- A. $y = 65$
- B. No real solution
- C. $y = -57$
- D. $y = 57$

4. Solve the equation: $(y + 3)/y = 4/3$

- A. No real solution
- B. $y = 1$
- C. $y = 9$
- D. $y = -9$

Inequalities

5. Solve the inequality: $-2 + 2x < 34$

- A. $x < 18$
- B. $x > 18$
- C. $x \geq 18$
- D. $x \leq 18$

6. Solve the inequality: $(x - 5)(x - 8) \leq 0$

- A. $x \leq 5$
- B. $x \leq 5$ or $x \geq 8$
- C. $x > 8$
- D. $5 \leq x \leq 8$

Limits

7. Evaluate the limit: $\lim_{x \rightarrow 2} (x^2 - 4)/(x - 2)$

- A. 2
- B. Does not exist
- C. 3
- D. 4

8. Evaluate the limit: $\lim_{x \rightarrow 6} (x^2 - 36)/(x - 6)$

- A. 12
- B. 18
- C. 6
- D. Does not exist

Derivatives

9. Find the derivative: $f(x) = (x^2 + 1)(4x)$

- A. $8x^2 + 4$
- B. $12x^2 + 4$
- C. $8x^2 + 4x$
- D. $12x^2 + 4x$

10. Find the derivative: $f(x) = (x^2 + 5)(3x)$

- A. $9x^2 + 15$
- B. $6x^2 + 15$
- C. $6x^2 + 15x$
- D. $9x^2 + 15x$

Integrals

11. Compute the definite integral: $\int_0^1 2x(x^2 + 1) \, dx$

- A. $1/2$
- B. 1
- C. $3/2$
- D. 2

12. Compute the definite integral: $\int_0^2 2x(x^2 + 2) \, dx$

- A. 8
- B. 12
- C. 16
- D. 18