



Instrumentation, Automation & Robotics Technology Enrollment Assessment Information

There are one (1) section in the Instrumentation, Automation & Robotics Assessment:

Assessment	Passing Score
Algebra	60

*You will have two attempt to pass the algebra assessment.

ALGEBRA ASSESSMENT

The Instrumentation, Automation & Robotics Technology Algebra Assessment is a custom designed mathematical evaluation that focuses on elementary algebraic concepts. There are two versions of the assessment and consists of 25 questions divided into different topic areas.

Topics include:

- simplifying and solving arithmetic expressions
- computation with integers and rational numbers
- evaluation of simple formulas and expressions
- computation with monomials and binomials
- simplifying algebraic fractions
- simplifying rational algebraic expressions
- solving linear equations and other algebraic equations
- translating written phrases into algebraic expression

An applicant is allowed to attempt both versions of the algebra assessment while trying to reach a benchmark requirement of 60 percent or above.



1. Solve: $\frac{1}{3} + \frac{2}{5}$

2. Solve: $\frac{3}{8} + \frac{2}{5}$

3. Solve: $\frac{7}{3} - \frac{3}{2}$

4. Solve: $\frac{2}{3} - \frac{7}{12}$

5. Solve: $2\frac{3}{5} \cdot 5\frac{1}{2}$

6. Solve: $8\frac{1}{4} \cdot 4 \cdot \frac{1}{2}$

7. Solve: $\frac{13}{2} \div \frac{9}{4}$

8. Solve: $5\frac{5}{6} \div 2\frac{1}{10}$

9. Solve: $(7)(8) =$

10. Solve: $8 \cdot 3 \cdot 6 =$

11. Solve: $(5)(15)(4) =$

12. Solve: $27 \cdot 11 \cdot 2 =$

13. Solve: $(9)(18)(72) =$

14. Solve: $2 \cdot 3 \cdot 88 \cdot 2 =$

15. Solve: $(3^2)(4^2) =$

16. Solve: $3^3 \cdot 4^3 =$

17. Solve: $(8^2)(2^7)(5^2) =$

18. Solve: $(3 \cdot 4)^2 =$

19. Solve: $7^2 \cdot 6^4 - 42 + 11 =$

20. Solve: $[(3^3) - 2] \cdot 4 - 10^2 =$

21. Solve: $55a + 48a + 72a =$

22. Solve: $8M \cdot 2 + 37M - 12M =$

23. Solve: $127\text{ft} - 142\text{ft} + (-85\text{ft})5 =$

24. Solve: $\sqrt{9} =$

25. Solve: $\sqrt{144} =$

26. Solve: $\sqrt{16^2} =$

27. Solve: $\sqrt{12 + 24} =$

28. Solve: $6 \cdot \sqrt{49} =$

29. Solve: $(3)\sqrt{92 - 28} =$

30. Solve: $(4x - 7)^2 =$

31. Solve: $(2x + 4)(3x - 5) =$



32. Solve: $(5y - 3)(7y + 18) =$

33. Solve: $(8 + z)(2z + 6) =$

34. Simplify: $\frac{6a^2b}{-2ab^2}$

35. Simplify: $\frac{10X^2+5X}{5X}$

36. If $A = BC$, please solve for C

37. If $X = YZ$, please solve for Y

38. Solve for X, $20 - 7X = 6X - 6$

39. Solve for X, $2X - 3(X + 4) = -5$

40. Solve for X, $-10X + (-19) = 19 + (-8X)$

41. Solve for X, $6X + (-2) + 2X = -2 + 4X + 8$

42. If the total cost of x apples is b cents, what is a general formula for the cost, in cents, of y apples?

43. Two thousand tickets were sold in an exhibition on Saturday. The cost of a ticket for an adult is \$4 and for a child is \$2. The total amount collected on Saturday was \$6400. Find the number of adult tickets and child tickets sold on Saturday.

44. Aaron is 5 years younger than Ron. Four years later, Ron will be twice as old as Aaron. Find their present ages.

45. The cost of two tables and three chairs is \$705. If the table costs \$40 more than the chair, find the cost of the table and the chair.



ANSWERS:

1. $\frac{11}{15}$

2. $\frac{31}{40}$

3. $\frac{5}{6}$

4. $\frac{1}{12}$

5. $14\frac{3}{10}$ or $\frac{143}{10}$

6. $16\frac{1}{2}$ or $\frac{33}{2}$

7. $2\frac{8}{9}$ or $\frac{26}{9}$

8. $2\frac{7}{9}$ or $\frac{25}{9}$

9. 56

10. 144

11. 300

12. 594

13. 11,664

14. 1,056

15. 144

16. 1,728

17. 204,800

18. 144

19. 63,473

20. 0

21. 175a

22. 41M

23. - 440ft

24. 3

25. 12

26. 16

27. 6

28. 42

29. 24

30. $16x^2 - 56x + 49$

31. $6x^2 + 2x - 20$

32. $35y^2 + 69y - 54$

33. $22z + 2z^2 + 48$

34. $\frac{-3a}{b}$

35. $2X+1$

36. $C = A/B$

37. $Y = X/Z$

38. $X = 2$

39. $X = -7$

40. $X = -19$

41. $X = 2$

42. $\frac{by}{x}$

43. Adult 1200, Child 800

44. Ron 6, Aaron 1

45. Chair \$125,
Table \$165