PRE-ADMISSION MATH ASSESSMENT
SAMPLE ASSESSMENT AND PREPARATION GUIDE

Assessments are only held online via Accuplacer and Examity platforms.

If you apply to Conestoga College and receive a message from the Admissions Office indicating that you are required to write the English, Math, Biology or Chemistry assessment, they will have provided you with an online form to fill out that will be sent to the Test Centre Office. The Test Centre will coordinate the setup of your test with Accuplacer and Examity.

You can only schedule one assessment at a time on Examity, it is recommended you keep a note of which voucher code was used.

IMPORTANT INFORMATION:

ASSESSMENT FEE - $25 USD per assessment paid online after registration.

PREPARATION AND REVIEW BOOKLET

This booklet is designed to help you prepare for your Math Assessment.

HELPFUL HINTS

1.   Make sure your computer meets the [minimum requirements](#).

2.   Be on time! This will give you the opportunity to get setup.

3.   Listen carefully and follow directions.

4.   The tests are multiple choice. You will be required to choose the best answer to a question from several choices.

5.   If one question is too hard, leave it and go on to the next. You can always come back and try it again if there is time.

6.   Work steadily, and complete as many questions as you can. Please note the following are samples of the types of question you will encounter on the assessment and may not reflect exactly the difficulty of the assessment.

If you have a documented disability and require accommodations, please contact accessibility@conestogac.on.ca.

PRE-ADMISSION MATHEMATICS ASSESSMENT

OVERVIEW

The Conestoga College Pre-Admission Math Assessment has practical value for you and for us. Experience has shown that a student needs a certain level of skills in mathematics to succeed in Conestoga College programs. Therefore, we have designed the Pre-Admission Math Assessment so that you, and we, may be certain you have the skills suitable to your program of study.

A sample assessment is included in this packet. In content, it parallels the actual Pre-Admission Math Assessment you will write at the College and covers subject material through the grade 12 level.

WHAT TO EXPECT

The Conestoga College Math Skills Assessment has 100 questions – 4 questions for each of the 20 different math skills. The assessment is multiple choice. You will be required to choose the best answer to a question from several choices <u>without</u> the use of a calculator.

       Math assessment   120 minutes

<u>We do not allow the use of calculators, dictionaries or learning aids.</u>

IMPORTANT: PLEASE NOTE

It is recommended that all applicants complete the entire Math Skills Assessment, i.e. all 100 questions.   Your overall score on the test is important.   However, some college programs require only partial test results to determine your level of readiness in mathematics.

Questions 1-100
Any of our Engineer Technology/Technician Programs (except Woodworking), and General Arts & Science – Aviation.

Questions 1-88
Any of our Business Programs

Questions 1 – 72
Certificate and Trades Programs, Woodworking, Health Sciences Programs and General Arts & Science

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SAMPLE PRE-ADMISSION MATH ASSESSMENT

Without the use of a calculator, perform the following operations, as indicated. Always state answers in the lowest form. Please note: the actual assessment is multiple choice.

Fundamentals

1.   216 + 64 + 1092 =

2.   318 – 95 =

3.   6 x 12 x 343 =

4.   How much would it cost to cover a floor 8 m x 6 m with carpet that costs $13 per square metre?

Fractions I

5.   Find the lowest common denominator of $\frac{1}{3}$, $\frac{1}{7}$, $\frac{1}{2}$

6.   Reduce $\frac{24}{56}$ to lowest terms

7.   List the prime factors of 216

8.   Evaluate $\frac{2}{0}$

Fractions II

9. $\frac{3}{4} + \frac{7}{8} =$

10. $\frac{11}{2} - \frac{2}{3} =$

11. $\frac{63}{8} \times \frac{3}{4} =$

12.   If $60\frac{2}{3}$ litres of gasoline are added to a tank that already contains $5\frac{1}{2}$ litres, what is the total amount of gasoline in the tank?

Fractions III

13. $\dfrac{7}{8} \times 1\dfrac{2}{3} \times \dfrac{24}{5} =$

14. $\dfrac{2}{3} \div \dfrac{5}{8} =$

15. $1\dfrac{3}{4} \div 3\dfrac{5}{8} =$

16. How many blocks which are $\dfrac{2}{3}$ metres in length must be laid end to end to make a row 66 metres long?

Order of Operations:

17. $12 + 12 \div 6 + 4 =$

18. $36 \div 12 \ x \ 6 - 4 =$

19. $(18 - 9) \div (20 \ x \ 6) =$

20. $15 + 5 \div 5 \ x \ 15 =$

Exponents I:

21. Evaluate $10^3 \ x \ 10^4 =$

22. Evaluate $2^2 \div 2^7 =$

23. Evaluate $-(7^2)\,(-4)^2 =$

24. Evaluate $(7 - 4)^2 =$

Decimals

25. $0.653 + 1.09 =$

26. $45.75 \ x \ 1.20 =$

27. $15.75 \div 0.25 =$

28. Write as a decimal "one thousand twenty-two and eighty-three hundredths."

Metric Conversions:

29.   456 mm to m =

30.   1500 m^2 to km^2 =

31.   36 km^2 to mm^2 =

32.   125 mm^3 to m^3 =

Fractions-Decimals-Percents:

33.   Write $\frac{2}{3}$ as a percent.

34.   Write 12 ½% as a decimal.

35.   Write 0.125 as a fraction.

36.   42.5 is what percent of 170?

Signed Numbers:

37.   -12 + 20 – (-12) =

38.   (-6) (2) ÷ (-12) (6) =

39.   -(-1) + (1) ÷ [-(-1)] =

40.   Which of the following would represent the lower temperature?
        (45°) (-24°) (51°) (-17°) (0°)

Scientific Notation:

41.   Express 4.95 x 10^{-3} in ordinary notation.

42.   Express 1.75 x 10^4 in ordinary notation.

43.   Express 0.000875 in scientific notation.

44.   Express 9250000 in scientific notation

Exponents II:

45. Simplify $2A^2 (2A)^2$

46. Simplify $(4B^3)^2$

47. Simplify $12C^2 \div (CD^0)$

48. Simplify $5E^5 \div (5E)^4$

Simplification:

49. $\dfrac{5AB}{C^2} \div \dfrac{A^3C}{B} \;=$

50. $2[7 - (-4 + 2) \, - 1] \;=$

51. $(D - \dfrac{A}{D}) \div (2\dfrac{D}{A}) \;=$

52. $\dfrac{2A}{3} - \dfrac{4A}{5} + \dfrac{3A}{4} \;=$

Substitution:
Given A = 3, B = -1, C = -2, D = 0, E = 0

53. $A(-B + \dfrac{1}{C}) \;=$

54. $A^2 (BC)^3 + \dfrac{D}{C} \;=$

55. $A \,-\, B^2 \left(\dfrac{C^3}{A}\right) \;=$

56. $AEC^3 \div (A^2B^3D) \;=$

Expand by removing Brackets:

57. $(2A + 3)(A - 2) \;=$

58. $7(AB)(A^2 - B) \;=$

59. $(4E - 3)^2 \;=$

60. $(6F - 7)(-1 - F) \;=$

Equations:

61.   If 3G = 24   G =

62.   If 4H + 7 = 23   H =

63.   If 5J − 6 = 2J + 12   J =

64.   If $\dfrac{K}{3} = \dfrac{15}{105}$ K =

Formula Rearrangement:

65. $V = \dfrac{D}{T}$ T =

65.   A = (V − U) ÷ T   V =

67. $V^2 = U^2 + 2AD$ U =

68. $D = \frac{1}{2} AT^2$ T =

Word Problems:

69.   Three times a number plus five is one hundred twenty-five. Find the number.

70.   Seven times one third of a number, minus four equals ten. Find the number.

71.   A collection of dimes and quarters totals $12.55. If there are three more dimes than quarters, how many dimes and quarters are there?

72.   Adding two years to the age of a boy would make him a quarter of his father's age. Five years ago his father was one year less than ten times his son's age. Determine the age of the boy and his father.

Systems of Equations, Solve:

73.   4A − 3B = 9,   A + B = 4   A =   B =

74.   3C − 12D = -5   4C + 6D = -3   C =   D =

75.   E + F = -1   2E + 3F = 0   E =   F =

76.   6G − 4H = 9   5G + 3H = -2   G =   H =

Graphing:

77. In Figure 1, which point is indicated by the co-ordinates (-2,3)?

figure 1

78. In Figure 2, what are the co-ordinates of the point where the line crosses the "Y" axis?

79. In Figure 2, what is the slope of the line?

figure 2

80. In Figure 3, what are the co-ordinates of the point where the line crosses the "X" axis?
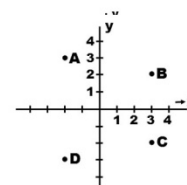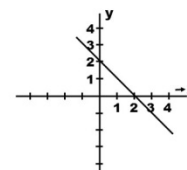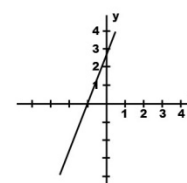
Radicals:

figure 3

81. $\sqrt{48}$

82. $\sqrt{0.0001}$

83. $\sqrt{X^2 Y^3}$

figure 4

84. $\sqrt{\dfrac{16}{5A^3}}$
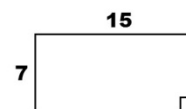
Simplification by Factoring:

85. $[(B^2 - 4)\,(A + 7)] \div [(B - 2)\,(2A + 14)] =$

figure 5

86. $(D^2 - 5D - 14) \div (D^2 - 3D - 10) =$

87. $(4F^2 - 1) \div (4F^2 + 8F + 3) =$

figure 6

88. $(3H^4 + 6H^2 - 9) \div (4H^4 - 4) =$
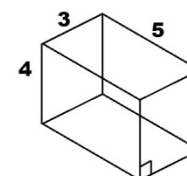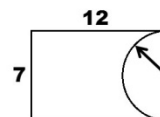
Geometry: (Take $\pi = \dfrac{22}{7}$)

89. What is the area of Figure 4?

90. What is the volume of Figure 5?

91. What is the perimeter of Figure 6?
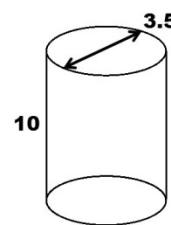
92. What is the surface of Figure 7?

figure 7

Angles:

93.   How many degrees is 2 π radians?

94.   What is the complementary angle of 18°?

95.   What is the equivalent positive angle of -235°?

96.   What is the supplementary angle of 105°?

Trigonometry:

97.   In Figure 8, what is the value of SIN(A)?

98.   In Figure 8, what is the value of COS(A)?

99.   In Figure 9, what is the value of TAN(B)?
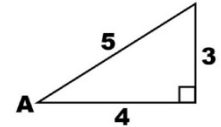
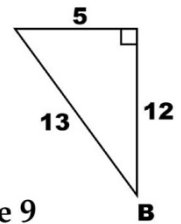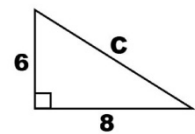100.   In Figure 10, what is the value of side "C"?

figure 8

figure 9

figure 10

ANSWERS:

1. 1372
2. 223
3. 24696
4. $624
5. 42
6. $\frac{3}{7}$
7. 3x3x3x2x2x2
8. Undefined
9. $1\frac{5}{8}$
10. $4\frac{5}{6}$
11. $5\frac{29}{32}$
12. $66\frac{1}{6}$
13. 7
14. $1\frac{1}{15}$
15. $\frac{14}{29}$
16. 99
17. 18
18. 14
19. $\frac{3}{40}$
20. 30

35. $\frac{1}{8}$
36. 25%
37. 20
38. 6
39. 2
40. -24
41. 0.00495
42. 17500
43. 8.75×10^{-4}
44. 9.25×10^{6}
45. $8A^4$
46. $16B^6$
47. 12C
48. $\frac{E}{125}$
49. $\frac{5B^2}{A^2C^3}$
50. 16
51. $\frac{A(D^2 - A)}{2D^2}$
52. $\frac{37A}{60}$
53. 1 ½
54. 72

68. $T = \pm \sqrt{2D/A}$
69. 40
70. 6
71. 38 D, 35 Q
72. Boy 9, Father 44
73. A = 3, B = 1
74. C = -1, D = $\frac{1}{6}$
75. E = -3, F = 2
76. G = ½, H = $-\frac{3}{2}$
77. A
78. (0,2)
79. -1
80. (-1, 0)
81. $4\sqrt{3}$
82. 0.01
83. $XY\sqrt{Y}$
84. $\frac{4}{A}\sqrt{\frac{1}{5A}}$
85. $\frac{B+2}{2}$
86. $\frac{D-7}{D-5}$
87. $\frac{2F-1}{2F+3}$

21. 10,000,000

22. $\frac{1}{32}$

23. -784

24. 9

25. 1.743

26. 54.90

27. 63

28. 1022.83

29. 4.56×10^{-1} m

30. 1.5×10^{-3} km^2

31. 3.6×10^{13} m^2

32. 1.25×10^{-7} m^3

33. $66\frac{2}{3}\%$

34. 0.125

55. $5\frac{2}{3}$

56. Undefined

57. $2A^2 - A - 6$

58. $7A^3B - 7AB^2$

59. $16E^2 - 24E + 9$

60. $-6F^2 + F + 7$

61. G = 8

62. H = 4

63. J = 6

64. $K = \frac{3}{7}$

65. $T = \frac{D}{V}$

66. V = AT + U

67. $U = \pm\sqrt{V^2 - 2AD}$

88. $\frac{3(H^2+3)}{4(H^2+1)}$

89. 105 sq. units

90. 60 cu. units

91. 42 units

92. 129.25 sq. units

93. 360

94. 72

95. 125

96. 75

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

98. $\frac{4}{5}$

99. $\frac{5}{12}$

100. 10