



## **REGISTRAR'S OFFICE MATHEMATICS ADMISSION TESTING GUIDE (CAT 4)**

**Has the Registrar's Office required you to write the Admission Test? This happens when:**

- An applicant is a mature student (19 years of age or older) and does not have an OSSD or equivalent.
- An applicant has an OSSD, but does not meet the English and/or Math requirements for a postsecondary program.
- An applicant has not submitted all documentation related to their formal education to the Registrar's Office.

For further information, please refer to the St. Clair College Policy and Procedure Manual for Admissions found at: [www.stclaircollege.ca/registrar/](http://www.stclaircollege.ca/registrar/)

**You should know that:**

- The Admission Test may be WRITTEN ONLY ONCE during the current application period for each semester.
- If for any reason you are unable to write on your scheduled test date, you must call to reschedule.

**To schedule (or reschedule) your test in Windsor, please call Testing Services at 519-972-2727, ext. 4226.  
To schedule (or reschedule) your test in Chatham, please call 519-354-9714, ext. 3306.**

- Windsor testing begins promptly at 9:30 A.M. Photo ID is required.
- Chatham testing begins promptly at 9:00 A.M. Photo ID is required.
- Late arrivals will be required to book another appointment.
- Once you begin the test, you will not be allowed to leave the test room.
- Ask questions if you are unclear about anything.

**Before and after the test**

- Applicants with physical, learning, emotional, or medical disabilities that could affect test taking should **call 519-972-2727, ext. 4226 in Windsor or 519-354-9714, ext. 3306 in Chatham to discuss their disability with a counsellor.**
- Examples of test questions are provided in this booklet. For more assistance, ask for the math review DVD or visit the website <http://www.stclaircollege.ca/studentservices/testingservices.html>
- Test results will be forwarded to the Registrar's Office shortly after completion of the test.

**GOOD LUCK!**

## THE MATH TEST

Prospective students who do not have the math requirement for their program(s) of choice will be required to write **1 (one)** or **2 (two)** math test(s). These tests are timed and in multiple-choice format.

### THE FOLLOWING PROGRAMS REQUIRE BOTH THE COMPUTATION & ESTIMATION AND THE PRE-ALGEBRA MATHEMATICS TESTS.

Architectural Technology	Mechanical Technician – CAD/CAM
Civil Engineering Technology	Medical Laboratory Technician
Computer Systems Technician – Networking	Motive Power Technician
Computer Systems Technology – Networking	Paramedic
Construction Engineering Technician – Civil	Pre-Service Firefighter
Electrical Engineering Technician	Pharmacy Technician
Electromechanical Engineering Technician-Robotics	Powerline Technician
Entertainment Technology	Sustainable Energy Technician
Heating, Refrigeration & Air Conditioning Technician	Veterinary Technician
Mechanical Engineering Technician – Industrial	Web Communications Development

### COMPUTATION & ESTIMATION (described below)

#### PRE-ALGEBRA MATHEMATICS TEST (CALCULATOR PROVIDED)

- Consists of 40 questions. Includes: equations with one unknown, square root, exponents, algebraic simplification, simple word problems, simple graphing, etc.
- You will have 50 minutes to complete this test.

### THE FOLLOWING PROGRAMS REQUIRE BOTH THE COMPUTATION & ESTIMATION AND THE ALGEBRA MATHEMATICS TESTS.

Cardiovascular Technology  
Chemical Laboratory Technology  
Diagnostic Medical Sonography  
Electronics Engineering Technology-Industrial Automation  
Energy System Design Technology  
Mechanical Engineering Technology-Automotive Product Design  
Mechanical Engineering Technology-Mechatronics  
Medical Laboratory Science  
Power Engineering Technology  
Respiratory Therapy

### COMPUTATION AND ESTIMATION (described below)

#### ALGEBRA MATHEMATICS TEST (CALCULATOR PROVIDED)

- Consists of 40 questions. Includes: word problems, algebraic simplification; factoring, slope, solving two equations with two unknowns; geometry involving rectangles & triangles; basic trigonometry, etc.
- You will have 50 minutes to complete the test.

**THE FOLLOWING PROGRAMS REQUIRE THE COMPUTATION & ESTIMATION MATHEMATICS TEST.**

Advertising  
All Techniques Programs  
Animation-Tradigital  
Business & Business Administration-all options  
Culinary Management  
Graphic Design  
Horticulture Technician-Landscape  
Journalism  
Music Theatre Performance  
Occupational Therapist Assistant/Physiotherapist Assistant  
Office Administration – all options  
Personal Support Worker  
Practical Nursing

**COMPUTATION AND ESTIMATION (NO CALCULATOR ALLOWED)**

- Consists of 36 questions. Includes: signed numbers, fractions, percent, exponents, scientific notation, etc.
- You will have 35 minutes to complete this test.

**NOTE: Applicants will never write more than two math tests. Should an applicant be applying to programs listed under more than one category, only the most advanced tests will apply.**

## SAMPLE MATH TESTS

### Pre-Algebra

1.  $\frac{(9+3-2 \times 5)^2}{\sqrt[2]{36}-\sqrt[2]{16}} =$

- A 2
- B 4
- C 16
- D 24

2. Another way to write  $6.2 \times 10^{-2}$  is

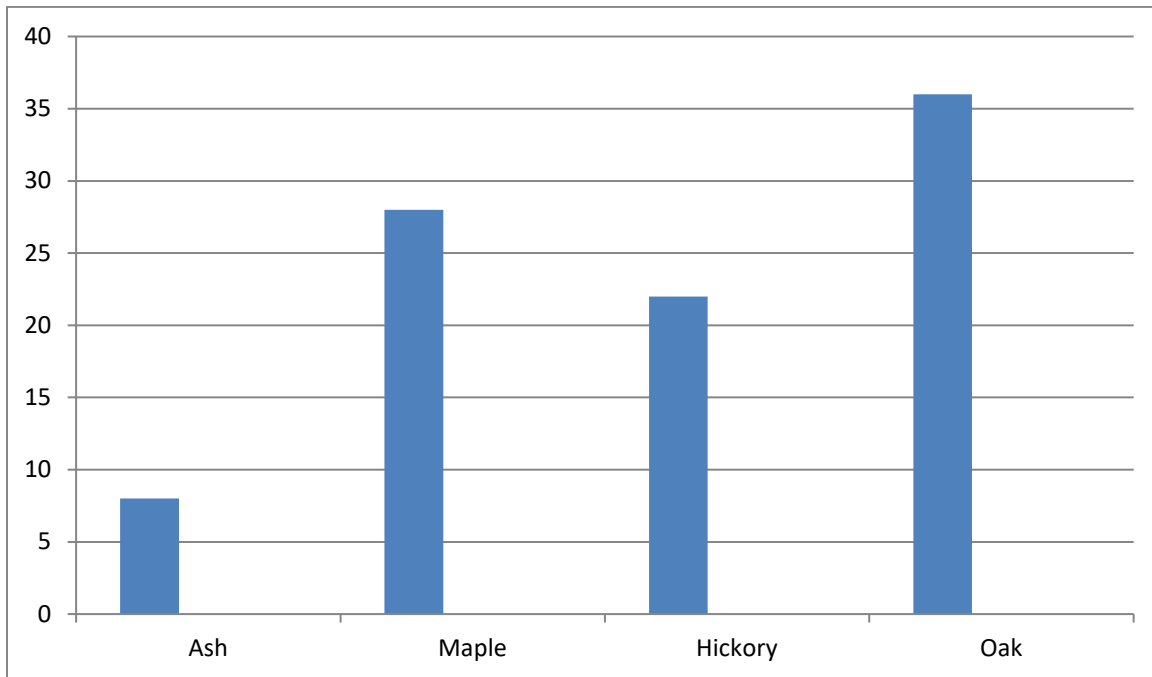
- A 620
- B 0.62
- C 0.062
- D 0.0062

3. Simplify  $3(2x + 3y) - 2(2x + y)$

- A  $4x - 4y$
- B  $2x + 4y$
- C  $2x + 7y$
- D  $7x + 2y$

Questions 4 and 5 refer to the information provided below.

An inventory of a local bush lot found trees of the following types.



4. Approximately how many trees in this bush lot are ash or hickory?

- A 20
- B 30
- C 40
- D 50

5. Which of the following is the approximation of the percentage of trees in this bush lot that are maple or oak?

- A 40%
- B 50%
- C 60%
- D 70%

6. What is the value of  $x$  that solves the equation  $4(6 + x) - 2x = 0$ ?

- A -4
- B -12
- C 12
- D 4

7. A vintage outboard motor requires a fuel that is prepared from gasoline and oil in the ratio of 24:1. If there are 8 liters of gasoline to be used to prepare the fuel, how many liters of oil will be required?

- A  $\frac{1}{4}$
- B  $\frac{1}{3}$
- C  $\frac{1}{2}$
- D 1

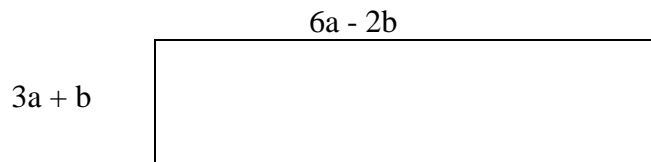
8. Study the table of values below.

<b>r</b>	<b>s</b>
<b>1</b>	<b>9</b>
<b>4</b>	<b>0</b>
<b>6</b>	<b>-6</b>
<b>7</b>	<b>-9</b>

Which equation was used to create the table?

- A  $s = 3r - 12$
- B  $s = 12r - 3$
- C  $s = -3r - 12$
- D  $s = -3r + 12$

9. Study the drawing below.



An expression for the perimeter of this rectangle is

- A  $9a - b$
- B  $27a - 3b$
- C  $18a - 2b$
- D  $6a - 6b$

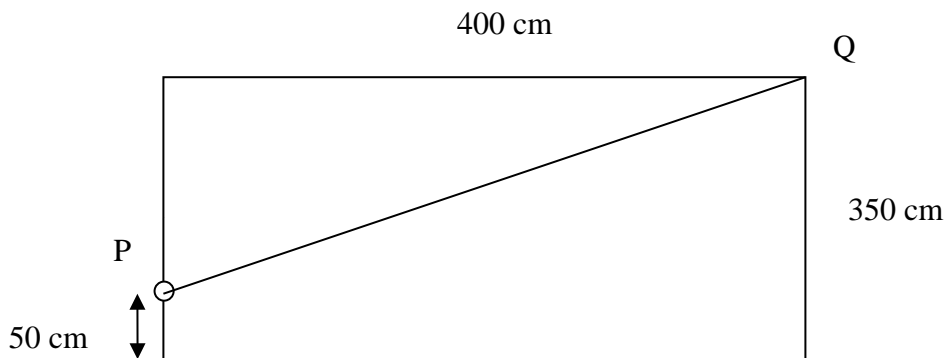
10.  $\left(\frac{3}{4}\right)^2 \times 3\frac{7}{9} =$

- A  $1\frac{1}{9}$
- B  $2\frac{1}{3}$
- C  $2\frac{1}{4}$
- D  $2\frac{1}{8}$

11. What is 20% of  $25 \times 10^5$ ?

- A  $45 \times 10^5$
- B  $45 \times 10^1$
- C  $5 \times 10^5$
- D  $5 \times 10^4$

12. The diagram below shows a sketch of walls being built. Gary must run a cable directly from point P on the side of one wall to a point Q at the corner of the room.



What is the best approximation for the smallest length of cable needed?

- A 500 cm
- B 520 cm
- C 620 cm
- D 640 cm

(ANSWERS: 1. A, 2. C, 3. C, 4. B, 5. D, 6. B, 7. B, 8. D, 9. C, 10. D, 11. C, 12. A)

## Algebra

1. The rate for a long distance telephone call is \$0.65 for the first minute, then \$0.30 for each additional minute. Which expression could be used to calculate the cost of a long distance telephone call lasting 15 minutes?  
  
**A**  $0.65 + 0.30 \times 15$   
**B**  $0.30 + 0.65 \times 15$   
**C**  $0.65 + 0.30 \times 14$   
**D**  $0.30 + 0.65 \times 14$
  
2. Simplify  $x(x - 3) + (2x - 4)(x + 3)$   
  
**A**  $2x^2 + x - 12$   
**B**  $2x^2 - x - 12$   
**C**  $3x^2 + x - 12$   
**D**  $3x^2 - x - 12$
  
3. Solve for  $b$ , where  $3^{(2b-3)} = 27$   
  
**A** 1  
**B** 2  
**C** 3  
**D** 6
  
4. In a collection of coins, there are  $j$  nickels and  $j + 4$  quarters. An expression for the total value of these coins in cents is  
  
**A**  $5j + 25j$   
**B**  $5(j + 4) + 25j$   
**C**  $5j + 25j + 4$   
**D**  $5j + 25(j + 4)$



5. Evaluate  $2^0 + 3^{-2} + 9^{-1}$

**A**  $1\frac{2}{9}$

**B**  $\frac{2}{9}$

**C**  $-\frac{2}{9}$

**D** -9

6. If  $3(a + 1) = 24$ , then what is the value of  $2a + 1$ ?

**A** 7

**B** 14

**C** 15

**D** 17

7. Study the two equations below.

$$4x + 2y = 6$$

$$3x + 2y = 9$$

What value for  $(x, y)$  solves the equations?

**A** (1, 1)

**B** (3, 0)

**C** (-3, 0)

**D** (-3, 9)

8. Solve for  $x$ , where  $x^2 + 2x - 24 = 0$

**A** 1, 24

**B** 2, -12

**C** -3, 8

**D** 4, -6

9. If  $f(x) = 3x^2 - 4x + 6$ , what is the value of  $f(-2)$ ?

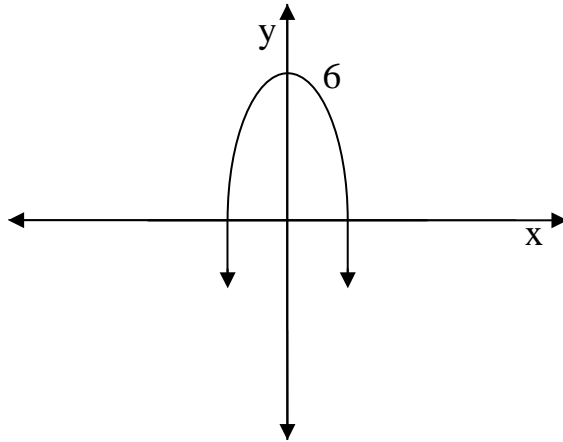
**A** 26

**B** 8

**C** 2

**D** -8

10. Study the graph below.



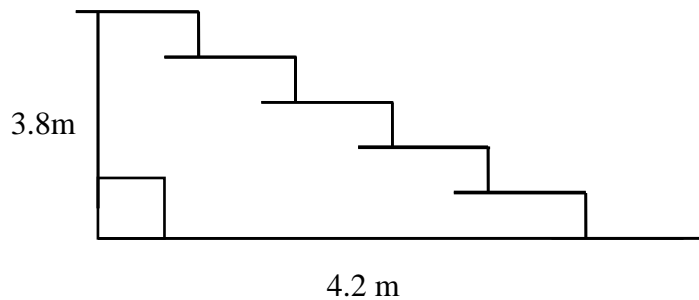
Which equation best represents the parabola in the graph?

- A  $y = 6x^2$
- B  $y = x^2 - 6$
- C  $y = 6 + x^2$
- D  $y = 6 - x^2$

11. The equation of the line through the point  $(-3, 12)$  with a slope of 4 is

- A  $y = 4x + 12$
- B  $y = 4x - 9$
- C  $y = 4x + 24$
- D  $y = 4x + 15$

12. The distance between two floors in a building is 3.8 m. The horizontal length of the staircase is 4.2 m.



What is the approximate angle of inclination of the stairs?

- A 40 °
- B 45 °
- C 50 °
- D 55 °

**(ANSWERS: 1. C, 2. D, 3. C, 4. D, 5. A, 6. C, 7. D, 8. D, 9. A, 10. D, 11. C, 12. A)**

## Computation and Estimation

1.  $(-3) \times (-4) =$

- A - 12
- B 12
- C 7
- D -7

2. 36 is 30% of what number?

- A 10.8
- B 108
- C 112
- D 120

3.  $\frac{5}{12} + \frac{1}{8} =$

- A  $\frac{6}{20}$
- B  $\frac{6}{8}$
- C  $\frac{13}{24}$
- D 52

4. The school band sold tickets for their annual concert. They sold 60 children's tickets, 140 adult tickets and 220 student tickets. What approximate percentage of all the tickets sold were adult tickets?

- A 13.3%
- B 23.3%
- C 33.3%
- D 66.6%

5. The expression  $5^{10} \times 5^6$  has the same value as

- A  $5^{16}$
- B  $5^{60}$
- C  $25^{16}$
- D  $25^{60}$

6.  $\$4000 \times (.1) - \$3000 \times (0.01) =$

- A \$37
- B \$307
- C \$370
- D \$3070

7. Gary's truck is expected to consume 7.2 L of gasoline for every 100 km of driving. If gasoline sells for \$1.20/L, what would Gary expect to pay for gasoline in order to drive 350 km?

- A \$21.00
- B \$28.40
- C \$30.24
- D \$58.33

8. If  $a = 2$ , then the value of  $6a - 3a^3$  is

- A -12
- B -6
- C 0
- D 12

9. A bicycle store sells mountain bikes and city bikes. Last month, the ratio of mountain bikes sold to city bikes sold was 8:3. If 132 bicycles were sold last month, how many more of the bicycles were mountain bikes than city bikes?

- A 20
- B 40
- C 60
- D 80

10. Given  $Q = 4\sqrt{s^6} + \frac{30}{3-s}$ , what is the value of Q when  $s = 2$ ?

- A 8
- B 28
- C 40
- D 62

11.  $1\frac{3}{5} \times \frac{1}{8} \times \frac{2}{3} =$

A  $\frac{6}{120}$

B  $1\frac{6}{16}$

C  $\frac{2}{15}$

D  $2\frac{2}{15}$

**(ANSWERS: 1. B, 2. D, 3. C, 4. C, 5. A, 6. C, 7. C, 8. A, 9. C, 10. D, 11. C)**

Revised: 09/28/15