

Fundamental Level - MATH 050 and MATH 060

Addition, subtraction, multiplication and division using whole numbers, decimals and fractions are some of the topics covered in the Fundamental level. There is also an introduction to estimation, percent, ratios and proportions. Calculators are not to be used during the assessment.

Sample Questions:

1. Add.

$$\begin{array}{r} 4 \ 6 \ 2 \ 8 \\ + \ 1 \ 5 \ 0 \ 3 \\ \hline \end{array}$$

2. Subtract.

$$\begin{array}{r} 3 \ 5 \ 6 \\ - \ 2 \ 3 \ 5 \\ \hline \end{array}$$

3. Subtract.

$$\begin{array}{r} 6 \ 0 \ 7 \\ - \ 3 \ 2 \ 4 \\ \hline \end{array}$$

4. Multiply.

$$\begin{array}{r} 1 \ 4 \\ \times 5 \ 7 \\ \hline \end{array}$$

5. Divide.

$$6 \overline{)894}$$

6. Round 45.678 to the hundredths place.

7. Add.

$$54.6 + 7.89$$

8. Multiply.

$$12.427 \times 4$$

9. Divide.

$$0.08 \overline{)64}$$

10. Add.

$$\frac{1}{8} + \frac{3}{8}$$

11. Subtract.

$$\frac{3}{4} - \frac{2}{6}$$

12. Add.

$$5\frac{1}{3} + 2\frac{1}{6}$$

13. Subtract.

$$3\frac{1}{4} - 2\frac{1}{8}$$

14. Multiply.

$$\frac{2}{3} \times \frac{3}{8}$$

15. Divide.

$$\frac{1}{15} \div \frac{2}{5}$$

16. Convert 18.75% to a decimal.

17. Convert $\frac{2}{25}$ to a percent.

18. How much is 15% of 30?

Intermediate Level - MATH 070

Intermediate level math offers a review and further study of decimals, fractions, ratios, proportions, percent and measurement. Perimeter, area and volume are studied from a formula approach. Integers, powers, roots and scientific notation are introduced. Basic algebraic expressions, equations and formulas are also introduced.

Sample Questions:

1. Solve the following proportion.

$$\frac{6}{8} = \frac{15}{x}$$

2. If 1 g = 1000 mg,
How many g are in
700 mg?

3. Simplify $\sqrt{16}$.

4. Evaluate using the
correct order of
operations.
(i.e. BEDMAS)

$$40 - 2^2 \times 3^2 + 5$$

5. Find the area and
the perimeter of the
rectangle.



6. Find the average of
6, 8 and 16.

7. Divide.

$$-35 \div 7$$

8. Subtract.

$$-5 - (-4)$$

9. Write the correct
symbol, > (greater
than) or < (less
than)

$$-70 \quad ____ \quad -75$$

10. Evaluate the
expression

$$\frac{x}{2} - 5 \text{ when } x = -8$$

11. Solve.

$$5x - 8 = 12$$

12. Solve.

$$x + 4 = 2x - 3$$

Advanced Level - MATH 080 and MATH 011

MATH 080 is an introductory course at the Advanced level. This course refreshes basic real number operations and prepares students for further studies in algebra. Topics include first-degree equations and inequalities, linear equations, systems of equations, polynomials, rational expressions and equations, radical expressions and equations, and right-angled trigonometry.

MATH 011 is equivalent to Pre-Calculus 11 and builds upon the skills in MATH 080. This Advanced level course includes a study of linear equations and inequalities, relations and functions, systems of equations, polynomials, rational expressions and equations, radical expressions and equations, quadratic equations and functions, and introductory trigonometry.

Sample Questions:

1. Simplify.

$$-(7x + 4 - 28y)$$

2. Collect like terms.

$$2y + 3y^2 - 3y + y^2$$

3. Solve.

$$-4x - 2 = 3x + 4 + 5x$$

4. Solve.

$$-3(x + 1) = 2x + 4$$

5. Simplify.

$$(3y^4)^2$$

6. Identify the slope
and y-intercept of
 $6x + 3y = 9$.

7. Find an equation of the line containing the points (1,6) and (-1,2).

8. Determine whether the graphs of the given pair of lines are parallel or perpendicular.

$$4y + 2 = 3x$$

$$-3x + 4y = -12$$

9. Solve and graph on a number line.

$$5(t + 3) + 9 > 3(t - 2) + 20$$



10. Multiply and simplify.

$$(2x - 4)(3x^2 + 5x - 1)$$

11. Solve.

$$6x + y = 16$$

$$-2x + 3y = -12$$

12. Factor completely.

$$2x^2 - 32$$

13. Factor completely.

$$4x^2 - 12x + 9$$

14. Factor completely.

$$27x^3 - 8$$

15. Solve.

$$x(x - 2) = 8$$

16. Solve $m = n - nt$ for n .

17. Find $f(-2)$ if $f(x) = x^3 - 3x + 4$.

18. Find $f(a + 1)$ if $f(x) = x^2 - 3x$.

19. Simplify.

$$\sqrt{75}$$

20. Divide and simplify.

$$\frac{\sqrt[3]{40x^2}}{\sqrt[3]{5x}}$$

21. Simplify.

$$(6 + \sqrt{5})^2$$

22. Subtract and simplify.

$$2\sqrt{10} - 7\sqrt{40}$$

23. Rationalize the denominator.

$$\frac{1}{\sqrt{3} - 2}$$

24. Solve.

$$\sqrt{2y + 9} = 5$$

25. Write a quadratic equation having 2 and -3 as solutions.

26. Solve $2x^2 + 5x - 3 = 0$ using the quadratic formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

27. Divide and simplify.

$$\frac{y^2 + 10y + 25}{2y} \div \frac{y^2 - 25}{4y^2}$$

28. Solve.

$$\frac{4}{x} - \frac{4}{x-1} = -2$$

29. Subtract and simplify.

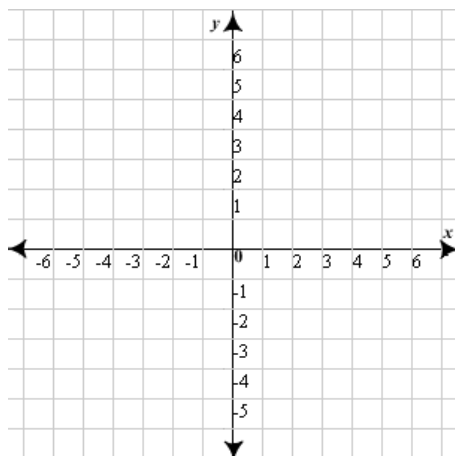
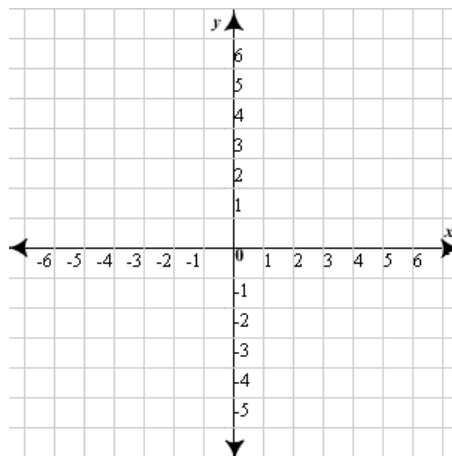
$$\frac{x-9}{x-2} - \frac{x-6}{2-x}$$

30. Simplify.

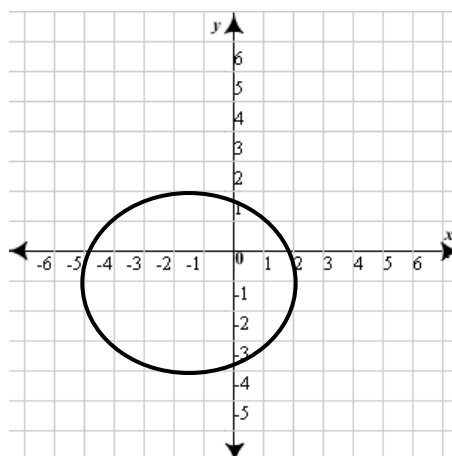
$$\frac{1 + \frac{1}{x}}{1 - \frac{1}{x^2}}$$

31. Graph.

$$y = \frac{1}{3}x + 2$$

32. Graph $f(x) = -2(x-1)^2 + 2$. Find the vertex, the line of symmetry, and the maximum or minimum value.

33. Find the domain and the range.

**Provincial Level - MATH 012**

MATH 012 is equivalent to Pre-Calculus 12. Students who complete most of the questions on the Math Assessment correctly may be placed into MATH 012.

Sample Question Solutions:

Fundamental Level

1. 6131
2. 121
3. 283
4. 798
5. 149
6. 45.68
7. 62.49

8. 49.708
9. 800
10. $\frac{1}{2}$
11. $\frac{5}{12}$
12. $7\frac{1}{2}$ or $\frac{15}{2}$
13. $1\frac{1}{8}$ or $\frac{9}{8}$

14. $\frac{1}{4}$
15. $\frac{1}{6}$
16. 0.1875
17. 8%
18. 4.5

Intermediate Level

1. 20
2. 0.7g
3. 4
4. 9

5. Perimeter = 26 cm
Area = 36 cm^2
6. 10
7. -5

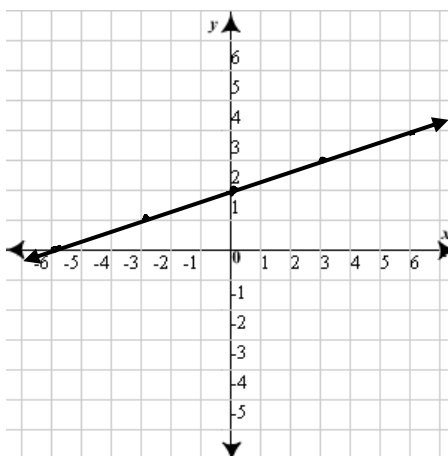
8. -1
9. >
10. -9
11. 4
12. 7

Advanced Level

1. $-7x - 4 + 28y$
2. $4y^2 - y$
3. $x = -\frac{1}{2}$
4. $x = -\frac{7}{5}$
5. $9y^8$
6. slope = -2
y-intercept = (0,3)
7. $y = 2x + 4$
8. Parallel
9. $t > -5$

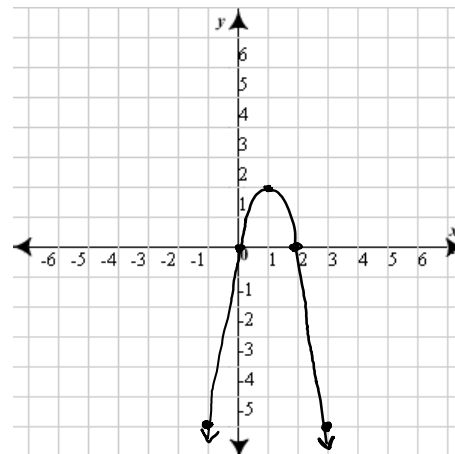


10. $6x^3 - 2x^2 - 22x + 4$
11. (3, -2)
12. $2(x - 4)(x + 4)$
13. $(2x - 3)^2$
14. $(3x - 2)(9x^2 + 6x + 4)$
15. $x = -2, 4$
16. $n = \frac{m}{1-t}$
17. 2
18. $a^2 - a - 2$
19. $5\sqrt{3}$



20. $2\sqrt[3]{x}$
21. $41 + 12\sqrt{5}$
22. $-12\sqrt{10}$
23. $-\sqrt{3} - 2$
24. $y = 8$
25. $x^2 + x - 6 = 0$
26. $x = -3, \frac{1}{2}$
27. $\frac{2y(y+5)}{y-5}$
28. $x = -1, 2$
29. $\frac{2x-15}{x-2}$
30. $\frac{x}{x-1}$
31. $y = \frac{1}{3}x + 2$

32. vertex: (1,2)
line of symmetry: $x = 1$
maximum: $y = 2$



33. domain:
 $\{x | -5 \leq x \leq 2\}$
range:
 $\{y | -4 \leq y \leq 2\}$