

NUMERACY

- $23 - 5[16 - (4)(3)]$
- $8(-7+3) - 2(5-1)$
- $-2[4(8-7) + 5(1-3)]$

- $\frac{1}{4} + \left(\frac{-5}{3}\right) - \left(\frac{-3}{-8}\right)$
- $\left(\frac{5}{9}\right)\left(-1\frac{1}{6}\right)\left(\frac{-3}{14}\right)$
- $2\left(\frac{2}{5}\right) - \left(\frac{-3}{4} + \frac{1}{8}\right)$

Co-ordinate graphing

- Calculate the slope between the points $(-1, 5)$ and $(-4, -3)$ using the slope formula.
 - slope between $(3, -6)$ & $(0, 5)$.
- Graph the following equations in the grid. Label the lines.
 - Graph $y = -2x + 5$ by completing the table of values first.

X	Y
0	
3	
-2	
-3	

** Use a sheet of graph paper for this question. (# 2 a - e on one) xy set of axes*

- Graph $y = \frac{3}{4}x - 5$ without a table of values.
- Graph a line A parallel to the one above that passes through the point $(-2, -5)$.
- Graph line B perpendicular to the one above going through the same y-intercept.
- Graph the equation $y = -\frac{1}{3}x + 2$ without a table of values.

- Complete the chart.

Equation of line	Slope	Co-ordinates of the Y - Intercept	Co-ordinates of the X - Intercept	perpendicular
$y = 5x - 3$				
$y = 4x$				
$y = -\frac{3}{5}x - 4$				

- Determine the equation of the in each problem.
 - slope is -5 and y-intercept is $(0, -6)$.
 - the line has a slope of -2 and passes through the point $(-4, 7)$.
 - the line passes through the points $(3, -6)$ and $(-2, 4)$.
- Determine the equation of a line that passes through the point $(-8, -5)$ and is perpendicular to the line $y = -2x + 3$.
- Determine algebraically if the point $(-2, 3)$ satisfies the line $y = 5x - 7$.
- Re-arrange the equation $3x - 4y - 24 = 0$ into the $y = mx + b$ form.

Algebra

- Evaluate for $x = -3$ and $y = -5$.

$$2x^2 - 3x^2y - y^3$$

- Simplify fully.
 - $4x - 5 + 7x + 6 - 10x - 7x - 13$
 - $7x + 5y - 12x - 4y$
 - $-5x^3 - 3x^2 - 4x + 6 + 3x^2 - 5x - 12$
 - $(5x - 3y) - (3x - 4y)$

d) $5(6x+7)$

e) $2x^2(x^2+6x-3)$

f) $-2x+6-2(3x-5)$

g) $3(4x-y+3)+2(5x-4y-7)$

i) $(x^2)(x^4)(x) =$

m) $\frac{x^9}{x^3} =$

n) $\frac{x^3}{x^8} =$

o) $\frac{14x^4}{7x} =$

p) $3x^3y(x^2y^2+4y-2) =$

q) $\frac{12x^6y^2}{8x^4y^5} =$

r) $(m^4n)^3 =$

s) $(4m^3n^2)^3$

3. Simplify fully.

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

b) $\frac{18x-9}{9}$

c) $\frac{(3x^4y^3)^2(-4xy^2)^3}{(2x^2y^3)^4}$

d) $\frac{15x^6y^3-10x^3y^2+5x^2y}{5x^2y}$

Percents

Round-off all answers to the nearest tenth except dollar amounts.

1. 8 out of 35 students scored very high on a recent test. What percentage of the class did not score high?

2. 30% of a number gives you 40. What is that number?

3. The overhead projector in the poster at this side of the room has retail price of \$ 450.00. It is on sale for two-thirds OFF. Taxes are 13%. Calculate the purchase price.

4. An ipod has a retail price of \$ 560.00 is on sale for \$325.00. Calculate the discount rate to the nearest tenth of a percent.

Solving Equations

Solve the following. Check your answers.

1. $8(7-y) = -24$

2. $-7(1-4m) = 13(2m-3)$

3. $\frac{5}{7}m = -50$

4. $\frac{-11}{7}x + \frac{6x}{5} = 39$

5. $\frac{x+5}{4} - \frac{3x+7}{16} = \frac{5x-3}{12}$

6. $\frac{x-3}{5} + 2 = \frac{x+4}{6}$

Word Problems

1. Two numbers have a sum of 15. The smaller number plus 3 times the larger number is 33. What are the numbers?

2. At Best Buy, a DVD player costs half as much as a stereo and a remote control car costs \$25 less than a stereo. If the total for the three items is \$225, how much is each?

3. The combined mass of a dog and a cat is 28 kg. If the dog is 3 times as heavy as the cat, determine their masses.

4. A bottle and a cork cost \$1.10. If the bottle costs \$1 more than the cork, how much does each cost?

Formula rearranging

1. If $A = \frac{1}{2}bh$, solve for h

2. If $P = 2l + 2w$, solve for w

3. If $y = mx + b$, solve for b and also solve for m

Numeracy

$$\begin{aligned} \textcircled{1} \quad 1. \quad & 23 - 5[6-12] \\ & = 23 - 5[4] \\ & = 23 - 20 \\ & = 20 \end{aligned}$$

$$\begin{aligned} 2. \quad & 8(-7+3) - 2(5-1) \\ & = 8(-4) - 2(4) \\ & = -32 - 8 \\ & = -40 \end{aligned}$$

$$\begin{aligned} 3. \quad & -2[4(8-7) + 5(1-3)] \\ & = -2[4 + (-10)] \\ & = -2(-6) \\ & = 12 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad a) \quad & \frac{1}{4} + \left(-\frac{5}{3}\right) - \left(-\frac{3}{8}\right) = \frac{1}{4} - \frac{5}{3} + \frac{3}{8} \\ & = \frac{6}{24} - \frac{40}{24} + \frac{9}{24} \\ & = -\frac{25}{24} \end{aligned}$$

$$b) \quad \left(\frac{5}{9}\right) \left(-\frac{7}{6}\right) \left(-\frac{3}{14}\right) = \frac{5}{36}$$

$$\begin{aligned} c) \quad & \frac{12}{5} - \left(-\frac{3}{4} \times \frac{8}{1}\right) = \frac{12}{5} + 6 \\ & = \frac{12}{5} + \frac{30}{5} \\ & = \frac{42}{5} \end{aligned}$$

Coordinate Geometry Page 1

$$\begin{aligned}
 1a) m &= \frac{y_2 - y_1}{x_2 - x_1} \\
 &= \frac{5 - (-3)}{-1 - (-4)} \\
 &= \frac{5 + 3}{-1 + 4} \\
 &= \frac{8}{3}
 \end{aligned}$$

$$\begin{aligned}
 b) m &= \frac{-6 - 5}{3 - 0} \\
 &= \frac{-11}{3}
 \end{aligned}$$

Page 2

$$4. a) y = -5x - 6$$

$$\begin{aligned}
 b) y &= -2x + b \\
 7 &= -2(-4) + b \\
 7 &= 8 + b \\
 -1 &= b
 \end{aligned}$$

$$\therefore y = -2x - 1$$

$$c) m = \frac{4 - (-6)}{3 - (-2)}$$

$$\begin{aligned}
 &= \frac{10}{5} \\
 &= 2
 \end{aligned}$$

$$y = 2x + b$$

$$4 = 2(-2) + b$$

$$4 = -4 + b$$

$$8 = b$$

$$\therefore y = 2x + 8$$

$$5. m = \frac{1}{2} \quad -5 = \frac{1}{2}(-8) + b$$

$$-1 = b$$

$$\therefore y = \frac{1}{2}x - 1$$

10 Academic Math

Gr. 9 Review for the Review Test

NUMERACY

1. $23 - 5[16 - (4)(3)]$ 2. $8(-7 + 3) - 2(5 - 1)$ 3. $-2[4(8 - 7) + 5(1 - 3)]$

2. Simplify. Reduce to lowest terms.

a) $\frac{1}{4} + \left(\frac{-5}{3}\right) - \left(\frac{3}{-8}\right)$ b) $\left(\frac{5}{9}\right)\left(-1\frac{1}{6}\right)\left(\frac{-3}{14}\right)$ c) $2\left(\frac{2}{5}\right) - \left(\frac{-3}{4} \div \frac{1}{8}\right)$

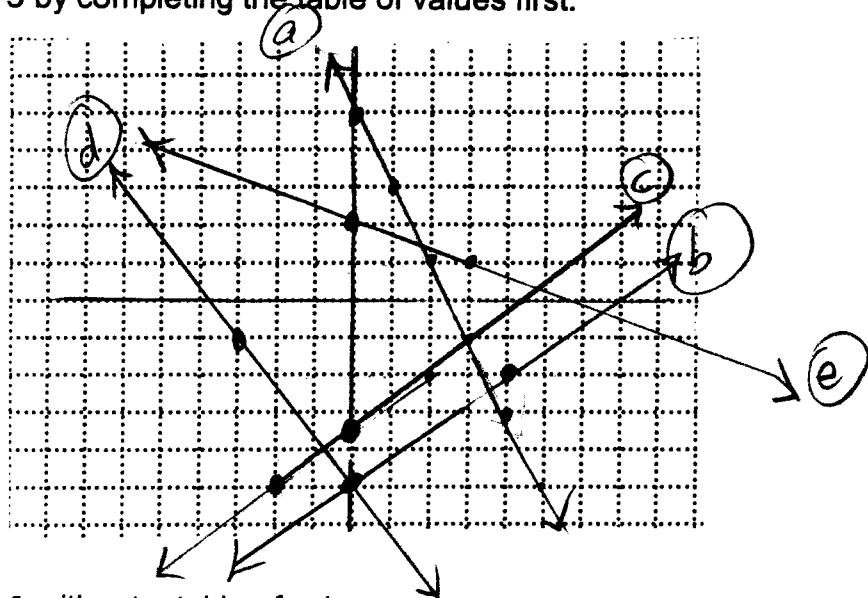
Co-ordinate graphing

1. a) Calculate the slope between the points $(-1, 5)$ and $(-4, -3)$ using the slope formula. b) slope between $(3, -6)$ & $(0, 5)$.

2. Graph the following equations in the grid. Label the lines.

a) Graph $y = -2x + 5$ by completing the table of values first.

x	y
0	5
3	-1
-2	9
-3	11



b) Graph $y = \frac{3}{4}x - 5$ without a table of values.

c) Graph a line A parallel to the one above that passes through the point $(-2, -5)$.

d) Graph line B perpendicular to the one above going through the same y-intercept.

e) Graph the equation $y = -\frac{1}{3}x + 2$ without a table of values.

3. Complete the chart.

Equation of line	Slope	Co-ordinates of the Y - intercept	Co-ordinates of the X - intercept	perpendicular slope
$y = 5x - 3$	5	$(0, -3)$	$(\frac{3}{5}, 0)$	$-\frac{5}{3}$
$y = 4x$	4	$(0, 0)$	$(0, 0)$	$-\frac{1}{4}$
$y = -\frac{3}{5}x - 4$	$-\frac{3}{5}$	$(0, -4)$	$(-\frac{20}{3}, 0)$	$\frac{5}{3}$

4. Determine the equation of the line in each problem.

a) slope is -5 and y-intercept is $(0, -6)$. _____

b) the line has a slope of -2 and passes through the point $(-4, 7)$.

c) the line passes through the points $(3, -6)$ and $(-2, 4)$.

5. Determine the equation of a line that passes through the point $(-8, -5)$ and is perpendicular to the line $y = -2x + 3$.

6. a) Determine algebraically if the point $(-2, 3)$ satisfies the line $y = 5x - 7$.

b) Re-arrange the equation $3x - 4y - 24 = 0$ into the $y = mx + b$ form.

Algebra

1. Evaluate for $x = -3$ and $y = -5$.

$$2x^2 - 3x^2y - y^3$$

2. Simplify fully.

a) $4x - 5 + 7x + 6 - 10x - 7x - 13$

b) $7x + 5y - 12x - 4y$

b) $-5x^3 - 3x^2 - 4x + 6 + 3x^3 - 5x - 12$

c) $(5x - 3y) - (3x - 4y)$