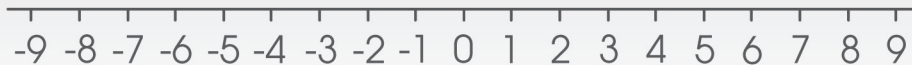




Activity One

a) Graph the following on the accompanying number line:

$x < 6 \text{ and } x > -2$



b) Find the value of $5 \times x$ if:

i) $x = 5$ _____

ii) $x = 9$ _____

iii) $x = -4$ _____

iv) $x = -16$ _____

c) Solve:

i) If $6 \times y = 48$ and $z - y = 4$, what is z ? $z =$ _____

ii) If $7 \times y = 56$ and $z - y = 1$, what is $z \times y$? $z \times y =$ _____

d) What is the 14th figure in this pattern?



14th figure = _____

e) Write an algebraic expression to represent:

i) y is increased by 13 = _____

ii) Twice $b =$ _____

iii) x cubed = _____

iv) The quotient of 12 and $y =$ _____

f) Solve each equation for the variable given.

i) $5a - 9 = 16$

ii) $7y + 14 = 28$

iii) $8c \div 4 = 12$

iv) $15x \times 4 = 180$

g) What is the missing term in these patterns?

i) 77, 62, _____, 32, 17

ii) -912, -813, _____, -615, -516

h) Solve the following.

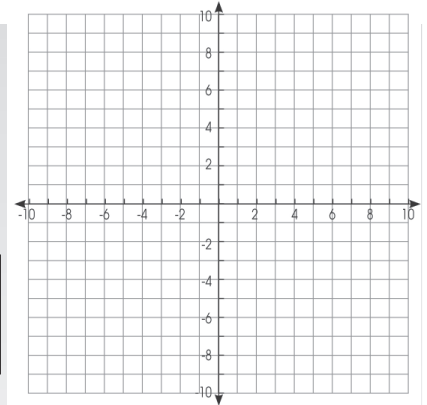
i) Since $9 \times 12 = 108$;
then $108 \div 12 =$ _____

ii) Since $7 \times 14 = 98$;
then $98 \div 7 =$ _____



Activity Two

- a) Plot the following equation on the grid: $y = 2x + 1$**
Draw a straight line through the coordinates.
First - complete the chart below.



x	-3	-2	-1	0	1	2	3
$y = 2x + 1$							

- b) Simplify the following expressions.**

i) $(x^2 + 2x - 1) + 3x(3 - 2x)$

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

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

iv) $7(-3x^2 + 4x + 9) + 2x(2x - 0)$

- c) Evaluate each algebraic expression with the given values.**

i) $y - 2x$; where $x = 3, y = 7$

ii) $3a + 2b$; where $a = -3, b = 3$

iii) $2c \times d - 5$; where $c = 2, d = 1$

iv) $3(2y + 2x)$; where $x = 2, y = 4$

v) $3(2x - y)^2$; where $x = 3, y = 1$

vi) $7(x \times 3y)^2$; where $x = 4, y = 2$

- d) Write each as a verbal expression.**

i) $x^3 =$ _____

ii) $b - 5 =$ _____

- e) Solve the following.**

i) If $2a + 4 = 10$ and $a + b + 5 = 14$,

a = _____ and b = _____

ii) If $c + d = 9$ and $c + d + e = 12$

e = _____

iii) If $7 + f = 11$ and $3 + f + g = 15$

f = _____ and g = _____

- f) Find each Quotient.**

i) $10 \div -5 =$ _____

ii) $-20 \div -4 =$ _____

iii) $55 \div -11 =$ _____

iv) $-64 \div 8 =$ _____



Activity Three

a) Solve these equations.

i) $-24 = -3x - 5x$

ii) $72 = 3 - 6x + 9$

iii) $4x - 3 = -12 + 10x$

iv) $2x + 12 = -6x - 4$

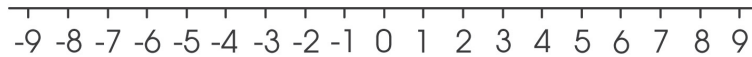
v) $9.6 \div 1.6 = x$

vi) $(4 \div 2) \times 2x = 8 \div 2$

vii) $x + (3 \times 4) = 7$

viii) $-8x + 2 = -4x + 6$

b) Graph the solution to x on the number line. $x - 7 = -4$



c) Solve each equation for the variable given.

i) $5a = 65$, $a = \underline{\hspace{2cm}}$

ii) $7b = 63$, $b = \underline{\hspace{2cm}}$

iii) $12c = 132$, $c = \underline{\hspace{2cm}}$

iv) $9d = 144$, $d = \underline{\hspace{2cm}}$

v) $8e = -96$, $e = \underline{\hspace{2cm}}$

vi) $-14f = 56$, $f = \underline{\hspace{2cm}}$

d) On the following grid, cite the coordinates for the five objects indicated.



= _____



= _____



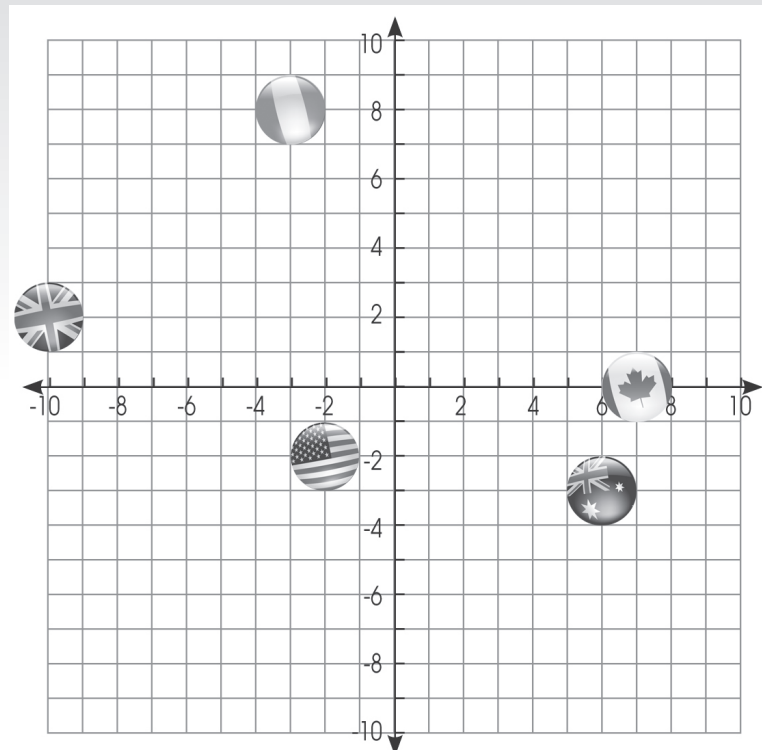
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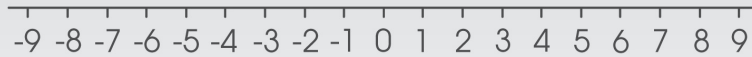


NAME: _____



Activity Four

a) Graph the solution to x on the number line. $-(-2) + 2x + 3 = 9$



b) Evaluate each algebraic expression with the given values.

i) $3y - x$; where $x = 3, y = 7$

ii) $5a + 7b$; where $a = -2, b = 6$

iii) $-4c \times 2d - 13$; where $c = -4, d = 2$

iv) $-2(4y + 5x)$; where $x = -2, y = -4$

v) $4(3x - 2y)^2$; where $x = 2, y = 1$

vi) $-3(2x \times y)^2$; where $x = 3, y = 2$

c) Write each number as a scientific notation.

i) $800 =$ _____

ii) $7000 =$ _____

iii) $0.00042 =$ _____

d) Write each as a standard notation.

i) $0.7 \times 10^{-3} =$ _____

ii) $6.66 \times 10^5 =$ _____

iii) $3.5 \times 10^{-4} =$ _____

e) Solve the following.

i) Since $9 \times 15 = 135$

then $135 \div 15 =$ _____

ii) Since $3510 \div 45 = 78$

then $45 \times 78 =$ _____

f) Complete the following patterns.

i) $-21, -35, -49,$ _____, _____.

ii) $17, 8, -1,$ _____, _____.

g) Simplify each expression.

i) $\frac{-90x^2}{18x} =$

ii) $\frac{16y}{48y^3} =$

iii) $\frac{36}{36x+72} =$



Activity Five

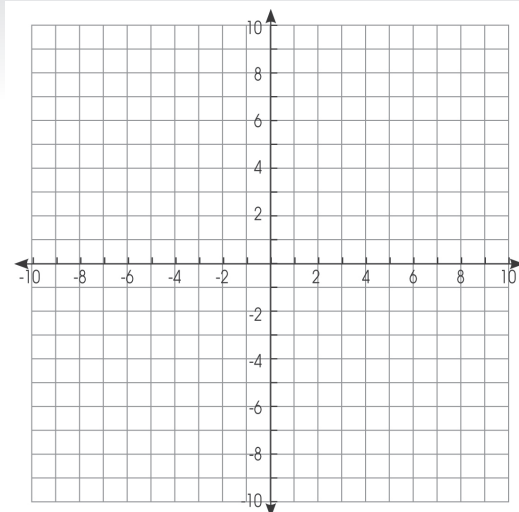
a) Plot the coordinates on the following grid.

$$A = (-2, 4)$$

$$B = (0, -3)$$

$$C = (8, 0)$$

$$D = (-5, -5)$$



b) What is the missing term in these patterns?

i) $-23, -12, \underline{\hspace{2cm}}, 10, 21$

ii) $701, 751, \underline{\hspace{2cm}}, 851$

c) Simplify and solve each equation.

i) $\sqrt{X} = 5$

ii) $\sqrt{X} = 13$

d) Find each sum.

i) $(-0.15) + (-0.12) = \underline{\hspace{2cm}}$

ii) $(-1.6) + (3.8) = \underline{\hspace{2cm}}$

e) Solve the following.

i) $a + 36 = 92$

ii) $8 \times b = 64$

iii) $552 + c = 601$

iv) $-2.71 + d = 8.8$

v) $23 - (-e) = 41$

vi) $77.2 + f - 13.5 = 77.2$

vii) $g + 12.03 = 34.2$

viii) $h + 2.1 = 4.5 - 1.2$

ix) $9i + 11 = 65$

x) $-3.2 + j = 7.1 - 0.09$



Activity Six

a) Solve the following.

i) If $4a + 6 = 18$ and $a + b + 6 = 16$, $a = \underline{\hspace{2cm}}$ and $b = \underline{\hspace{2cm}}$

ii) If $-2c + 4 = 14$ and $c + d = 11$ $d = \underline{\hspace{2cm}}$

iii) If $12 + f = 23$ and $6 + f + g = 23$ $f = \underline{\hspace{2cm}}$ and $g = \underline{\hspace{2cm}}$

b) Find each Quotient.

i) $26 \div -13 = \underline{\hspace{2cm}}$ ii) $-6 \div -4 = \underline{\hspace{2cm}}$ iii) $17 \div -1 = \underline{\hspace{2cm}}$ iv) $-12 \div 3 = \underline{\hspace{2cm}}$

c) Solve and simplify each expression.

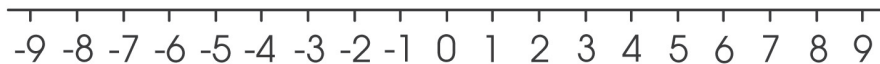
i) $\frac{-22x^2}{11x} =$

ii) $\frac{5y}{35y^3} =$

iii) $\frac{18}{36x+54} =$

iv) $\frac{12y-3}{27} =$

d) Graph the following on the accompanying number line. $x \leq 6$ and $x > -7$



e) Simplify the following expression.

i) $5(x^2 + 3x^2 + 3x + 7 - 4) - x^2 + 3x$

ii) $-2y^2 + 3x^2 - 3x + y^2 + 14y - 6x - 7y$

iii) $-2x(3x - 5) - x(x + 5) - x(-x + 8)$

iv) $-2x^2 - 3 - 7x - x^2 - 2x - 3x$

v) $3x^2 + 6 - 3y^2 - 2x + 3(x^2 - 3)$

vi) $2.4 + 34 - 12 + 2x + 3x^2$

vii) $7(x + 3) - 2x(x - 1)$

viii) $14(x^2 + 2x - 3) + 4x(x - 2)$

1.**a)**

Label -1 to 5 on the number line.

b)

i) 25 ii) 45 iii) -20
iv) -80

c)

i) $z = 12$
ii) $z \times y = 72$

**d)****e)**

i) $y + 13$ ii) $2b$
iii) x^3 iv) $12 \div y$

f)

i) $a = 5$ ii) $y = 2$
iii) $c = 6$ iv) $x = 3$

g)

i) 47 ii) -714

h)

i) 9 ii) 14

1A**2.****a)**

Label the following coordinates: (-3, -5), (-2, -3), (-1, -1), (0, 1), (1, 3), (2, 5), (3, 7)

b)

i) $-5x^2 + 11x - 1$
ii) $7x^2 - x + 15$
iii) $-x^2 - 6x + 4$
iv) $-17x^2 + 28x + 63$

c)

i) 1 ii) -3
iii) -1 iv) 36
v) 75 vi) 4032

d)

i) A number cubed
ii) Five subtracted from a number

e)

i) $a = 3$, $b = 6$
ii) $e = 3$
iii) $f = 4$, $g = 8$

f)

i) -2 ii) 5 iii) -5
iv) -8

2A**3.****a)**

i) $x = 3$ ii) $x = -10$
iii) $x = 1.5$ iv) $x = -2$
v) $x = 6$ vi) $x = 1$
vii) $x = -5$ viii) $x = -1$

b)

i) Label 3 on the number line.

c)

i) $a = 13$ ii) $b = 9$
iii) $c = 11$ iv) $d = 16$
v) $e = -12$ vi) $f = -4$

d)

= (-2, -2)



= (7, 0)



= (-10, 2)



= (6, -3)



= (-3, 8)

3A**4.****a)**

Label 2 on the number line.

b)

i) 18 ii) 32
iii) 51 iv) 52
v) 64 vi) -432

c)

i) 8×10^2 ii) 7×10^3
iii) 4.2×10^{-4}

d)

i) 0.0007 ii) 666000
iii) 0.00035

e)

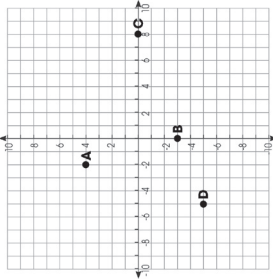
i) 9 ii) 3510

f)

i) -63, -77 ii) -10, -19

g)

i) $-5x$ ii) $1/3y^2$
iii) $1/1x + 2$

4A**5.****a)****b)**

i) -1 ii) 801

c)

i) 25 ii) 169

d)

i) -0.27 ii) 2.2

e)

i) $a = 56$ ii) $b = 8$
iii) $c = 49$ iv) $d = 11.51$
v) $e = 18$ vi) $f = 13.5$
vii) $g = 22.17$
viii) $h = 1.2$ ix) $j = 6$
x) $j = 10.21$

5A**6.****a)**

i) $a = 3$, $b = 7$
ii) $d = 16$
iii) $f = 11$, $g = 6$

b)

i) -2 ii) 1.5
iii) -17 iv) -4

c)

i) $-2x$ ii) $1/7y^2$
iii) $1/(2x + 3)$
iv) $(4y - 1)/9$

d)

Label from -6 to 6 on the number line.

e)

i) $19x^2 + 18x + 15$
ii) $-y^2 + 3x^2 - 9x + 7y$
iii) $-6x^2 - 3x$
iv) $-3x^2 - 12x - 3$
v) $6x^2 - 3y^2 - 2x - 3$
vi) $3x^2 + 2x + 24.4$
vii) $-2x^2 + 9x + 21$
viii) $18x^2 + 20x - 42$

6A

(these answers are for the 6 free bonus pages, see page 3 for download instructions)