






Contents

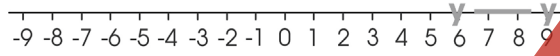
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NAME: _____

Warm-Up Drill Sheet #1



1a) Graph the following on the accompanying number line: **Ex: $y \leq 9$ and $y < 5$**
 $x < 5$ and $x > -5$



b) Determine the missing numbers in each equation. **Ex: $3 \times 9 = 27$ $18 \div 2 = 9$**

- i) $4x = 36$ ii) $108 \div \underline{\quad} = 6$ iii) $47 - \underline{\quad} = 38$ iv) $17 + \underline{\quad} = 52$

c) Find the value of $6 \times b$ if: **Ex: $b = 2$ $6 \times 2 = 12$**

- i) $b = 4$ ii) $b = 9$ iii) $b = 0$ iv) $b = 25$

d) What is the 11th figure in this pattern?



11th figure = _____

e) Solve the following. **Ex: If $b + d = 32$, then the value of f in $b + d + f = 102$ is:**
 $32 + f = 102$ $102 - 32 = 70$ $f = 70$

- i) If $a + c = 36$, what is the value of e in the equation $a + c + e = 42$? $e = \underline{\quad}$
 ii) If $5 \times y = 35$ and $z - y = 3$, what is z ? $z = \underline{\quad}$
 iii) If $8 \times y = 64$ and $z - y = 4$, what is $z \times y$? $z \times y = \underline{\quad}$

f) Write an algebraic expression to represent: **Ex: 5 increased by $x = 5 + x$**

- i) y is increased by 7 = _____ ii) Twice $a = \underline{\quad}$
 iii) b squared = _____ iv) The quotient of 16 and $p = \underline{\quad}$

Explore With Technology

Go to the website, <http://cemc2.math.uwaterloo.ca/mathfrog/english/kidz/Games6.shtml>
 Try some of the available fun resources and online games. These include topics on Order of Operations, Probability, and Two-Step Algebra Questions.



Warm-Up Drill Sheet #4

NAME: _____

10a) Evaluate each algebraic expression with the given values.

- i) $9y + x$; where $x = 9$, and $y = 8$ _____
 ii) $k4 + m$; where $k = 7$, and $m = 14$ _____
 iii) $st - 17$; where $s = 9$, and $t = 10$ _____
 iv) $12(y - x)$; where $x = 8$, and $y = 12$ _____



b) Solve each equation for the variable given.

- i) $11a = 143$, $a = \underline{\quad}$ ii) $7b = 105$, $b = \underline{\quad}$
 iii) $4c = 112$, $c = \underline{\quad}$ iv) $9d = 198$, $d = \underline{\quad}$

c) Complete the following patterns.

- i) $-9, -20, -31, \underline{\quad}, \underline{\quad}$ ii) $16, 4, -8, \underline{\quad}, \underline{\quad}$

d) Solve:

- i) $a + 7 = 9$ ii) $7 \times b = 21$ iii) $11 + c = 19$
 iv) $-5.6 + d = 12$ v) $8 - (-e) = 23$ vi) $7 + f - 1 = 32$
 vii) $g + 1.08 = 2.22$ viii) $h + 6.0 = 4.1 - 3.9$ ix) $3i + 8 = 17$

Reflection

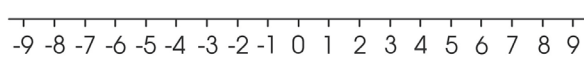
A membership at the local fitness center costs \$66.50 per month, plus \$15 for each session with a personal trainer. Write an expression to determine the cost of going to the fitness center for x number of sessions.

NAME: _____

Timed Drill Sheet #2



3a) Graph the following on the accompanying number line. $x \leq 6$ and $x > -9$



b) Determine the missing numbers in each equation.

- i) $a \div 7 = 1$ $a = \underline{\quad}$ ii) $35 \div b = 7$ $b = \underline{\quad}$ iii) $42 \div c = 6$ $c = \underline{\quad}$

c) Solve each equation for the variable given.

- i) $3a + 7 = 22$ ii) $8b - 9 = 39$
 iii) $12c \div 4 = 15$ iv) $11d \times 3 = 66$

d) What is the missing term in these patterns?

- i) 432, 415, _____, 381, 364 ii) -213, -238, _____, -288, -313

e) Solve the following:

- i) Since $12 \times 11 = 132$, then $132 \div 12 = \underline{\quad}$ ii) Since $9 \times 8 = 72$, then $72 \div 8 = \underline{\quad}$

f) Solve for a . **Ex: $a + 2 = 3$ $3/4 - 2/4 = 1/4$ $a = 1/4$**

- i) $a + 2/8 = 5/8$ $a = \underline{\quad}$ ii) $a - 2/5 = 1/5$ $a = \underline{\quad}$
 iii) $a \div 2.1 = 6$ $a = \underline{\quad}$ iv) $6 \times a = 9$ $a = \underline{\quad}$

g) Simplify the following expression. **Ex: $(x^2 + 2x + 5) + x(x + 2) = 2x^2 + 4x + 5$**

- i) $(3x + 2) + x(2)$ _____
 ii) $2(x^2 + 2x + 4) + x(x + 3)$ _____
 iii) $3(2x^2 - x + 6) - x(x - 7)$ _____
 iv) $12(-2x^2 + 3x + 0) + x(x - 5)$ _____



Timed Drill Sheet #5

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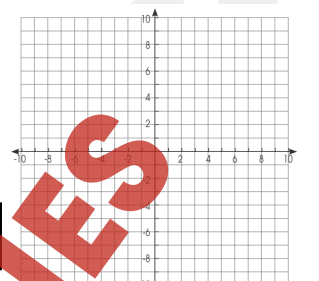


8a) Plot the following equation on the grid:

$y = -3x - 2$

Draw a straight line through the coordinates. First - complete the chart below.

x	-4	-3	-2	-1	0	1	2
$y = -3x - 2$							



b) Solve the following.

- i) If $a - 4 = 4$ and $a + b + 3 = 18$ $a = \underline{\quad}$ and $b = \underline{\quad}$
 ii) If $c + d = 10$ and $c + d + e = 30$ $e = \underline{\quad}$
 iii) If $7 + f = 15$ and $5 + f + g = 21$ $f = \underline{\quad}$ and $g = \underline{\quad}$

c) Find each sum.

- i) $(-9) - 5.2 = \underline{\quad}$ ii) $(-6.3) + (-4.5) = \underline{\quad}$ iii) $(3.3) - (-6.6) = \underline{\quad}$

d) Find each Quotient.

- i) $-36 \div 12 = \underline{\quad}$ ii) $-100 \div -5 = \underline{\quad}$ iii) $153 \div -17 = \underline{\quad}$ iv) $117 \div 9 = \underline{\quad}$

e) Simplify each expression using the Distributive Property.

- i) $-15(a + 17) = \underline{\quad}$ ii) $6(11 + 4y) = \underline{\quad}$ iii) $(3x - 12) \times 8 = \underline{\quad}$

f) Solve each equation.

- i) $6 = x \div 4 + 2$ ii) $-2 = \frac{10+x}{6}$ iii) $-8 = x \div 2 - 2$ iv) $-15 = -4x + 5$

Reflection

Determine which of the following alternatives follows the rules to this pattern: multiply by 2, add 26, subtract 4 (You may use a calculator for help.)

- i. 16, 54, 130, 278 ii. 14, 50, 123, 268 iii. 8, 38, 98, 218 iv. 26, 74, 172, 364

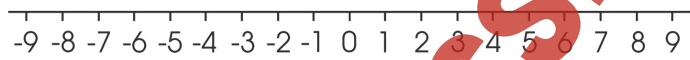


Review A

a) Which pattern has this rule: **increase by adding the same amount from each term?**

- i. 6, 11, 16, 20, 25 ii. 7.5, 13, 18.5, 24, 29.5
iii. -17, -23, -29, -35, -41 iv. 3.3, 6.6, 9.9, 18.8, 36.6

b) Graph the following on the accompanying number line: $x \leq 7$ and $x > -8$



c) Find the value of $7 \times y$ if:

- i) $y = 6$ ii) $y = 3$ iii) $y = 20$ iv) $y = -12$

d) If $x + y = 24$, what is the value of z in the equation $x + y + z = 29$? $z =$ _____

e) What is the 12th figure in this pattern?



12th figure = _____

f) If $8 \times x = 72$ and $x - y = 4$, what is y ? $y =$ _____

g) What rule describes the following pattern: -4, -8, -12, -16 _____

h) Write an algebraic expression to represent the following.

- i) a is decreased by 4 = _____ ii) Half $x =$ _____

i) Evaluate each algebraic expression with the given values.

- i) $5x + 2y$; where $x = 4$, and $y = 5$ ii) $7a + 3b$; where $a = 2$, and $b = -2$
iii) $ab - 12$; where $a = 6$, and $b = 3$ iv) $7(z - x)$; where $z = 8$, and $x = 5$
v) $12x = 144$, $x =$ _____ vi) $-4y = 24$, $y =$ _____
vii) $-6z = -42$, $z =$ _____ viii) $15a = -75$, $a =$ _____



Review B

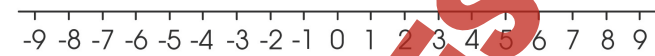
a) Examine the following pattern: -7, -21, -35 What is the 7th term in this pattern? _____

b) What is the missing term in this pattern: 333, 317, _____, 285, 269

c) Write an algebraic expression for each phrase.

- i) Seventy-seven times a number _____ ii) A number squared _____

d) Graph the following on the accompanying number line: $x \leq 4$ and $x \geq -2$



e) Solve each equation for the variable given.

- i) $4x + 12 = 28$ ii) $9a - 13 = 59$
iii) $10b \div 6 = -15$ iv) $8y \times 7 = 392$

f) Simplify the following expressions.

- i) $(y^2 + 4y + 8) + 2y(4 - y)$ ii) $5(a^2 + 3a + 5) - a(2a + 4)$

g) On the following grid, cite the coordinates for the four objects indicated.



= _____



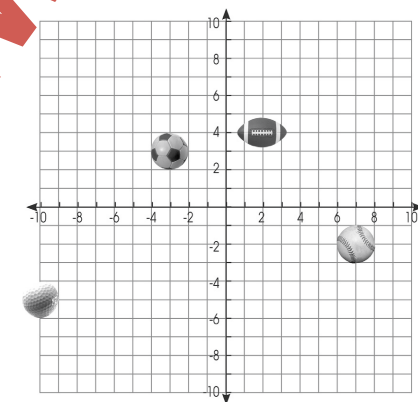
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= _____

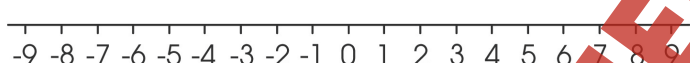


= _____



Review C

a) Graph the solution to x on the number line. $x + 7 = -1$



b) Solve each equation.

- i) $\sqrt{x} = 8$ ii) $\sqrt{x} = 11$

c) Evaluate each algebraic expression with the given values.

- i) $10a + b$; where $a = 7$, and $b = 8$ _____
ii) $7x + 2y$; where $x = -3$, and $y = 11$ _____

d) Solve:

- i) $-3.3 + d = 12$ ii) $7 - (-x) = 19$ iii) $72 + c = 99 - 19$
iv) $-32 = -6x - 2x$ v) $88 = 6 - 7x + 12$
vi) $4x - 2x = -22 + 3x$ vii) $x + 11 = -6x + 18$

e) Simplify the following expressions.

- i) $3(3x^2 - 4x + 6) + 3x(2x - 8)$ ii) $x(-2x^2 - 5x + 9) + 4x(x - 10)$
iii) $7(2x^2 - 5x + 8) - 3x(11x - 2)$ iv) $-3x(6x + 8x + 23) + 6x(3x - 2)$

f) What is the missing term in these patterns?

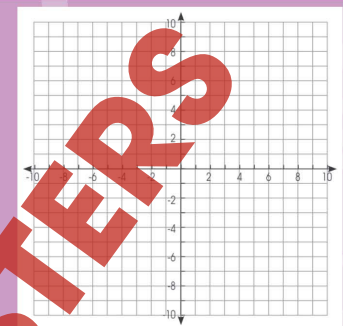
- i) 13, 24, 35, 46, _____ ii) -9, -30, _____, -72, -93

g) Write as a scientific or standard notation.

- i) 76800 = _____ ii) $9.14 \times 10^5 =$ _____

Plotting, Expressions, Scientific and Standard Notations

a) Plot the following equation on the grid.



Draw a straight line through the coordinates.

First - complete the chart below.

X =									
Y =									

b) Simplify each expression.

- i) $-\frac{\square}{\square} x^3 =$ _____ ii) $\frac{\square}{\square} y^2 =$ _____

c) Write each number as a scientific notation.

- i) = _____ ii) = _____

d) Write each as a standard notation.

- i) = _____ ii) = _____

e) Simplify the following expression.

- i) = _____

NAME: _____



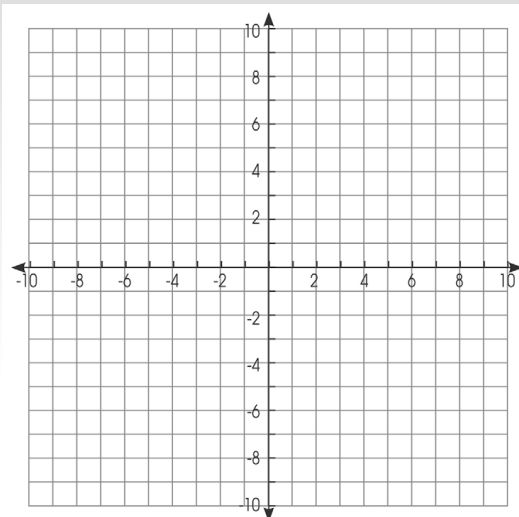
11a) Plot the following coordinates on the accompanying grid.

A = (1, 3)

B = (0, -5)

C = (-6, -4)

D = (8, 0)



b) What is the missing term in these patterns?

i) 12, 24, 48, 96, _____

ii) 1024, 512, 256, _____, 64

c) Simplify the following expressions.

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

ii) $(-x^2 - 3x + 6) + 3x(2x + 13)$

iii) $5(3x^2 - 2x + 1) - 4x(2x - 9)$

iv) $-x(2x + 4x + 3) + 2x(2x - 4)$

d) Solve each equation.

i) $\sqrt{x} = 8$

ii) $\sqrt{x} = 12$

iii) $4.6x + 1 = x$

iv) $y + 2 = 5.3$

v) $x + 3/5 = 4/5$

vi) $y \times 1/7 = 5/7$

e) Solve each proportion.

i) $7 \div 10 = x \div 4$

ii) $3 \div 5 = x \div 12$

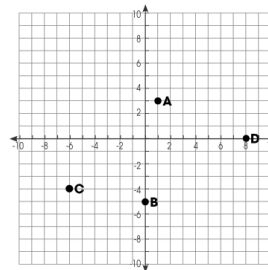
iii) $2 \div 4 = x \div 5$

iv) $2 \div 3 = x \div 15$



11.

a)



b)

i) 192 ii) 128

c)

i) $10x^2 - 22x + 6$
ii) $5x^2 + 36x + 6$
iii) $7x^2 + 26x + 5$
iv) $-2x^2 - 11x$

d)

i) $x = 64$ ii) $x = 144$
iii) $x = 4.6$ iv) $y = 3.3$
v) $x = 1/5$ vi) $y = 5$

e)

i) $x = 2.8$ ii) $x = 7.2$
iii) $x = 2.5$ iv) $x = 10$



12.

a)

i) $n + 32$
ii) 6×2

b)

i) $a = 4$ ii) $b = -3$
iii) $c = 8$ iv) $d = 11$

c)

2289

d)

i) $x = 3$ ii) $x = -10$
iii) $x = 2$ iv) $x = 1$

e)

i) $-5x/2$ ii) $1/3y^2$
iii) $\frac{3}{3x+2}$ iv) $\frac{6y-1}{8}$
v) $8/21$ vi) $9/20$
vii) $27/50$ viii) $5/6$
ix) $1 \frac{1}{6}$

18

13.

a)

i) $a = 18, b = 4$
ii) $e = 3$
iii) $f = 3, g = 30$
iv) 16 v) 108

vi) $a = 19$ vii) $b = 7$

viii) $c = 57$
ix) $d = 12.9$

x) $e = 16$ xi) $f = 15$

xii) $g = 4.45$
xiii) $h = -8.1$

xiv) $i = 4$ xv) $j = 48$

b)

= (-7, 2)

= (9, -4)

= (-4, -3)

= (10, 6)

= (5, 4)

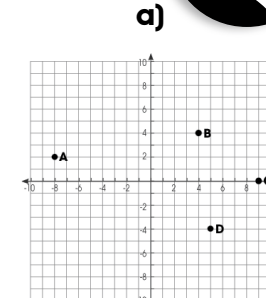
= (5, 4)

= (5, 4)

19

14.

a)



b)

i) $c = 17$ ii) $c = 45$
iii) $c = 72.6$ iv) $c = 8$

c)

i) $8x^2 + 4x + 2$
ii) $2x^2 + 2x + 8$
iii) $-3x$ iv) $9x^2 + x + 3$

d)

i) $x = 9$ ii) $x = -27$
iii) $x = -3$ iv) $x = 3$

e)

i) $x = 2$ ii) $x = -8$
iii) $x = -3$ iv) $x = 6$

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EASY MARKING ANSWER KEY