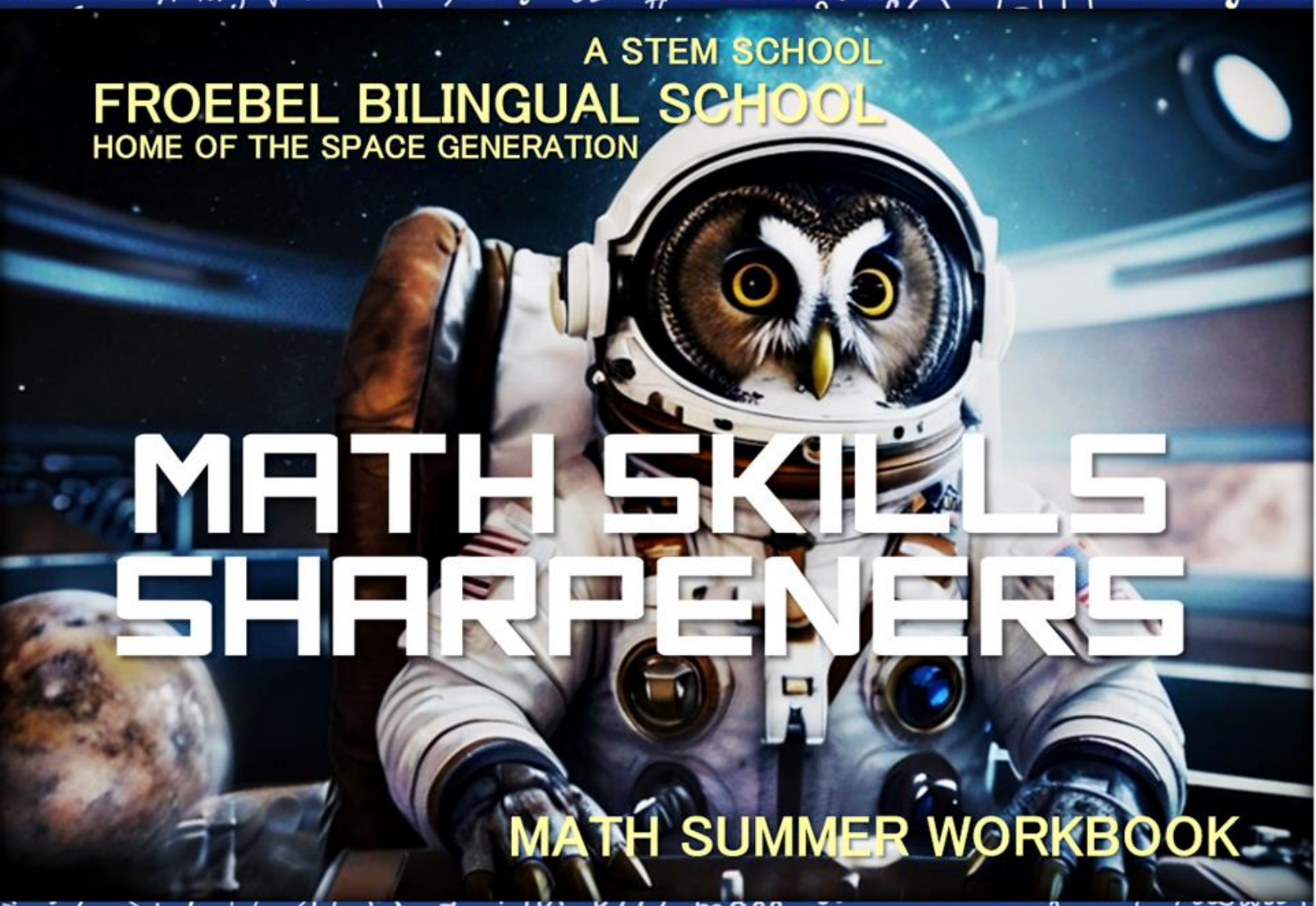
A STEM SCHOOL

FROEBEL BILINGUAL SCHOOL

HOME OF THE SPACE GENERATION



MATH SKILLS SHARPENERS

MATH SUMMER WORKBOOK

11

A STEM School

FROEBEL BILINGUAL SCHOOL

Home of the Space Generation

2024 SUMMER MATH SKILLS SHARPENER

Going to Eleventh Grade

STUDENT'S NAME	DATE
TEACHER COMING FROM	SCORE
TEACHER GOING TO	
PARENT'S SIGNATURE	DATE RECEIVED

SKILLS SHARPENER FOR STUDENTS GOING TO ELEVENTH GRADE MATH

WEEK 1.

Day 1

Solve the following problems

a) -2 + (+3) = _____

b) -7 - (-3) = _____

c) 14 - (-7) + (-2) =_____

Use the order of operations to solve the following problems.

a) 18 - (-12 - 3) = _____

b) 18 + (-7) • (32 – 6) = _____

c) -3 + 2(-6 ÷ 3)2= _____

Day 2

Solve multi step equations.

a) −12 = 2 + 5v + 2v=

b) 75 = 3(−6n − 5) =

c) −16 + 5n = −7(−6 + 8n) + 3=

d) −3(1 + 6r) = 14 − r=

Day 3 - Solving multi step equations.

a) $-20 = 2 + 5v + 6v =$ _____

b) $75 = 3(-6n - 5) =$ _____

c) $-16 + 5n = -7(-6 + 8n) + 3 =$ _____

Day 4 - Solve each equation. Show your work.

a) $26 = 8 + v$

b) $n + 16 = 9$

c) $-6 = \frac{b}{18}$

WEEK 2.

Day 1 - Evaluate each Algebraic expression

1. $2x - 6 \quad x = -2$

2. $2x^4 - 4x^3 \qquad x = 1$

Day 2 - Graph the function and its parent function by using a table of values. Then describe the transformation.

$f(x) = x^2 - 1$ Use these numbers to construct your table of values (-2 ,0, 2, 4)

2. (x) = x + 3. Use these numbers to construct your table of values (x = -2, -1 ,0, 1, 2, 3)

Day 3 - Identify the function family to which the function

1. (x) = |x + 2 | – 1

2. d(x) = $3(x - 2)^2 + 1$

Day 4 - Write a function g whose graph represents the indicated transformation of the graph of f

1. f(x) = 2x; translation 3 units down

2. I x) = |x | – 3; translation 3 units left

WEEK 3.

Day 1 - Find the slope formula to solve each exercise (2pts each) .

1. (2,5), (8,1)

2. (3,6) and (6,9)

Day 2 - Write the equation that describes each line in slope-intercept form (3pts) .

1. slope =3 y-intercept 4

2. Write an equation that passes through (-2,5) and (-4, -1).

Day 3 - Write I Write an equation that passes through the given points and satisfies the given conditions.

1. (5,1) parallel to $y = 3x - 1$

2. (0,3) perpendicular to $y = \frac{2}{3}x + 3$

Day 4 – Solve each System by Substitution

1. $\begin{cases} y = 3x + 2 \\ x + 2y = 11 \end{cases}$

2. 2x + y = 5

   y = x - 4

WEEK 4.

Day 1 - Solve each system by elimination .

1. $\begin{cases} 2x + y = -5 \\ 2x - 5y = 13 \end{cases}$

2. x - 2y = -19

   5x + 2y = 1

Day 2 - Solve each three-variable system .

x + y – 2z = 5

–x + 2y + z = 2

2x + 3y – z = 9

Day 3 - Describe the transformation of f(x) = x2 represented by g. Then graph each function.

1. g(x) = x^2 – 3

2. g(x) = (x + 2) ^{2}

Day 4 - Write a rule for *g* described by the transformations of the graph of *f*.

1. f(x) = x2; vertical stretch by a factor of 2 and a reflection in the x-axis, followed by a translation 2 units up

2. Let the graph of g be a vertical shrink by a factor of ½ followed by a translation 2 units up of the graph of f(x) = x2.

WEEK 5.

Day 1 - Graph the function. Label the vertex and axis of symmetry.

1. $y = \frac{1}{2}x^2 + x - 3\ ;\ x\ = -2, -1, 0, 1, 2$

2. $y = x^2 + 2x + 1;\ x\ = -2, -1, 0, 1, 2$

Day 2 - Tell whether the function has a minimum value or a maximum value. Then find the minimum or maximum value. Show all steps.

1. $y = -3x^2 + 18x - 5$

2. $y = 2x^2 + 8x + 7$

Day 3 - Factor the expression. If the expression cannot be factored, say so.

1. $y = x^2 + 2x + 1$

2. $y = x^2 + 15x + 56$

Day 4 –

A. Solve the equation using square roots. Show all steps .

1. $3x^2 = 75$

2. $2x^2 + 3 = 103$

B. Solve the equations by completing the square.

1. $x^2 + 2x - 6 = 0$

2. $x^2 + 4x - 2 = 0$

WEEK 6.

Day 1 - Solve the equation by factoring, showing all steps .

1. $x^2 - 11x = -30$

2. $x^2 + 6x = -5$

Day 2 - Find the square root of the number show all steps .

1. $\sqrt{-36}$

2. $-3\sqrt{-49}$

Day 3 – Add or subtract each complex number .

1. $(-7-\frac{1}{2}i)-(5+\frac{3}{2}i)$

2. $(7-4i)+(-4+5i)$

Day 4 - Find the product of each complex number. Show all steps .

1. $(4-i)(3+2i)$

2. $(3-6i)(3+6i)$

WEEK 7.

Day 1 - Solve the equation show all steps .

1. $2x^2+6=-34$

2. $x^2+7=-33$

Day 2 - Find the zeros of the function.

1. $f(x) = 7x^2 + 70$

2. $glx) = 3x^2 + 48.$

Day 3 - Determine What are the function is a polynomial function, if so, write in standard form determine the degree type and leading coefficient.

1. $g(x) = \sqrt{3} - 12x + 3x^2$

2. $y = 3x^{-2} + 3x + 5$

Day 4 - Evaluate the function for the given value of X show all steps .

1. $y = 2x^4 - 3x^3 + 2x^2 - 3$
   $x = 2$

2. $f(x) = x^4 - x^3 + 2x^2 - x$
   $x = -1$

WEEK 8.

Day 1 - Graph the polynomial function Show all steps (7 pts each show all steps).

1. $r(x) = 2x^3 - 3x^2 + 2x + 1$
   $x = -2, -1, 0, 1, 2$

Day 2 - Add or subtract each Polynomial .

1. $(12x^5 - 3x^4 + 2x - 5) + (8x^5 + 2x^4 + 1)$

2. $(5x^6 + 3x^5 - 2x^2 + 2) - (4x^6 - 2x^5 - 3x^2 + 1)$

Day 3 - Multiply each Polynomial (4pts each).

1. $(s + 7)(s - 5)$

2. $(2x + 3)^2$

Day 4 –

A. Divide using synthetic division show all steps (3 pts each).

1. $-x^3 + 3x^2 + X \div X - 2$

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