

Joseph's Coat of Many **COLORS**

Math in Living **COLOR**

Genesis 37: 1-11

Joseph, one of my favorite characters of the Bible, was one of twelve sons of Jacob, in a family with multiple mothers and a LOT of sibling rivalry.

“Jacob lived in the land where his father had stayed, the land of Canaan. This is the account of Jacob’s family line. Joseph, a young man of seventeen, was tending the flocks with his brothers, the sons of Bilhah and the sons of Zilpah, his father’s wives, and he brought their father a bad report about them. Now Jacob loved Joseph more than any of his other sons, because he had been born to him in his old age; and he made an ornate robe [traditionally this has been known as a “coat of many colors”!] for him. When his brothers saw that their father loved him more than any of them, they hated him and could not speak a kind word to him.

Joseph had a dream, and when he told it to his brothers, they hated him all the more. He said to them, ‘Listen to this dream I had: We were binding sheaves of grain out in the field when suddenly my sheaf rose and stood upright, while your sheaves gathered around mine and bowed down to it.’

His brothers said to him, ‘Do you intend to reign over us? Will you actually rule us?’ And they hated him all the more because of his dream and what he had said. Then he had another dream, and he told it to his brothers. ‘Listen,’ he said, ‘I had

another dream, and this time the sun and moon and eleven stars were bowing down to me.’

When he told his father as well as his brothers, his father rebuked him and said, ‘What is this dream you had? Will your mother and I and your brothers actually come and bow down to the ground before you?’ His brothers were jealous of him, but his father kept the matter in mind.” [These dreams did come TRUE!!]

New International Version (NIV)

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Can you picture Joseph, when his father gave him that special, colorful coat? It must have been a gorgeous coat, symbolic of his father’s love for him. He must have been SO proud! Can you picture him wearing it, showing it off to his brothers? Imagine also what his brothers, who were already jealous of him, must have thought of Joseph and this coat! In addition to this, Joseph had not just one dream, but TWO dreams, in which he himself was shown to be superior to all his brothers. This set the stage for a VERY interesting life for Joseph, who indeed was a very special character in God’s plan for his people—very special indeed! Please read Joseph’s ENTIRE story in Genesis 37-50! In MY case, it was

Math in Living COLOR!!

COLOR has been very special in my own life! In the early 1990s, I began to teach math with colored chalk instead of white chalk on a black or green board. Using different (or same) colors to illustrate different (or similar) concepts really makes the explanation much easier to understand. For me, a few years later, this became “**Math in Living COLOR!!**” As with Joseph, it was a special gift from the Father who really LOVES us. It was indeed a gift from the Lord, and it changed my career as a math teacher! As it was for Joseph, many of my “brothers” (colleagues!) didn’t seem to appreciate my gift for teaching math in color. It’s important to notice that Joseph was able to FORGIVE his brothers for the wrongs that they committed against him. Forgiveness is certainly one of God’s FAVORITE colors!

It was not until after my retirement from teaching that I realized there was a genetic component of my passion for ‘**COLOR.**’ My grandfather Warren W. Maytrott

founded Dahliadel and spent his life and career growing DAHLIAS in New Jersey. Because dahlias do not grow well in Florida, where I spent my own life and career, I was never privileged to see dahlias in bloom. After my retirement, there they were! Suddenly I was able to see what my GRANDFATHER had been seeing for his life and career--“**DAHLIAS in Living COLOR**”!!! The following are pictures we took in North Carolina, former home of Dahliadel in the Mountains from 1968 to 1975.



Kidd's Climax



Thomas A. Edison



Bert Pitt



Tropica



Lauren Michelle



Lady Darlene

Let me conclude with a couple of examples to compare math in “black and white” to math in “Living COLOR.”

SIMPLIFYING RADICALS

a) COMBINE:

$$4\sqrt{72x^3} - 8x\sqrt{50x} + 3\sqrt{98x^3}$$

$$= 4\sqrt{36x^2 \cdot 2x} - 8x\sqrt{25 \cdot 2x} + 3\sqrt{49x^2 \cdot 2x}$$

$$= 4 \cdot 6x\sqrt{2x} - 8x \cdot 5\sqrt{2x} + 3 \cdot 7x\sqrt{2x}$$

$$= (24x\sqrt{2x}) - (40x\sqrt{2x}) + (21x\sqrt{2x})$$

[NOTE: All are "like radicals" = $x\sqrt{2x}$]

$$= 5x\sqrt{2x}$$

b) MULTIPLY: $(6\sqrt{2} - 4\sqrt{3})(9\sqrt{2} - 5\sqrt{3})$

F	L
(6√2 - 4√3)	(9√2 - 5√3)
o	
F	L
= 54 · 2	- 30√6
= 108	- 66√2
= 168	- 66√6

[Not: 102√6]

SIMPLIFYING RADICALS 21

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FUNCTIONAL NOTATION

$f(x) = 5x + 2$ and $g(x) = \frac{x^2 + 4}{3x}$

and a) $f[g(x)]$ and b) $g[f(x)]$

f[x] = $5x + 2$

f[g(x)] = $5\left[\frac{x^2 + 4}{3x}\right] + 2$

$$= \frac{5x^2 + 20}{3x} + \frac{2 \cdot 3x}{3x}$$

$$= \frac{5x^2 + 20 + 6x}{3x}$$

$$= \frac{5x^2 + 6x + 20}{3x}$$

c) $g[x] = \frac{x^2 + 4}{3x}$

$g[f(x)] = \frac{(5x + 2)^2 + 4}{3(5x + 2)}$

$$= \frac{25x^2 + 20x + 4 + 4}{3(5x + 2)}$$

$$= \frac{25x^2 + 20x + 8}{3(5x + 2)}$$

FUNCTIONAL NOTATION 23

If $f(x) = 5x + 2$ and $g(x) = \frac{x^2 + 4}{3x}$

find a) $f[g(x)]$ and b) $g[f(x)]$

a) $f[x] = 5x + 2$

$f[g(x)] = 5\left[\frac{x^2 + 4}{3x}\right] + 2$

$$= \frac{5x^2 + 20}{3x} + \frac{2 \cdot 3x}{3x}$$

$$= \frac{5x^2 + 20 + 6x}{3x}$$

$$= \frac{5x^2 + 6x + 20}{3x}$$

b) $g[x] = \frac{x^2 + 4}{3x}$

$g[f(x)] = \frac{(5x + 2)^2 + 4}{3(5x + 2)}$

$$= \frac{25x^2 + 20x + 4 + 4}{3(5x + 2)}$$

$$= \frac{25x^2 + 20x + 8}{3(5x + 2)}$$

Which do YOU find easier to understand?

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