examples of shell scripts that demonstrate various arithmetic operations using bash syntax. These scripts assume you're using a Unix-like operating system with a bash shell.

1.Basic Arithmetic Operations:

#!/bin/bash

# Addition

result=$((10 + 5))

echo "10 + 5 = $result"

# Subtraction

result=$((20 - 8))

echo "20 - 8 = $result"

# Multiplication

result=$((6 \* 4))

echo "6 \* 4 = $result"

# Division (integer division)

result=$((15 / 3))

echo "15 / 3 = $result"

# Modulus (remainder)

result=$((17 % 4))

echo "17 % 4 = $result"

Floating-Point Arithmetic:

#!/bin/bash

# Using 'bc' command for floating-point arithmetic

result=$(echo "scale=2; 7.5 \* 3.2" | bc)

echo "7.5 \* 3.2 = $result"

2.Increment and Decrement:

#!/bin/bash

counter=5

# Increment

counter=$((counter + 1))

echo "Counter after increment: $counter"

# Decrement

counter=$((counter - 1))

echo "Counter after decrement: $counter"

Arithmetic with Variables:

#!/bin/bash

num1=12

num2=8

# Arithmetic with variables

sum=$((num1 + num2))

echo "Sum: $sum"

product=$((num1 \* num2))

echo "Product: $product"

Using expr for Arithmetic:

#!/bin/bash

num1=25

num2=5

# Using expr for arithmetic operations

sum=$(expr $num1 + $num2)

echo "Sum: $sum"

difference=$(expr $num1 - $num2)

echo "Difference: $difference"

product=$(expr $num1 \\* $num2) # Note the escaped \*

echo "Product: $product"