Following are the test data sets using distinct and various range of numbers to test the function. These

Data set also ensures a diverse range of possible inputs and test cases:

Test Data for createPackage():

CASE1:

packageId = 10

weight = 25

size = 4.8

destination = {row: 15, col: 12}

CASE2:

packageId = 20

weight = 15

size = 2.5

destination = {row: 5, col: 18}

CASE3:

packageId = 30

weight = 5

size = 1.2

destination = {row: 8, col: 5}

CASE4:

packageId = 40

weight = 500

size = 20.0

destination = {row: 22, col: 10}

CASE5:

packageId = 50

weight = 30

size = 6.7

destination = {row: 18, col: 20}

Test Data for validatePackage():

CASE1:

packageId = 10

weight = 25

size = 4.8

destination = {row: 15, col: 12}

CASE2:

packageId = 20

weight = 0

size = 0.0

destination = {row: 0, col: 0}

CASE3:

packageId = 30

weight = -5

size = -3.2

destination = {row: -10, col: -5}

CASE4:

packageId = 40

weight = 500

size = 20.0

destination = {row: 22, col: 10}

CASE5:

packageId = 50

weight = 35

size = 0.002

destination = {row: 5, col: 8}

Test Data for assignPackage():

CASE1:

packageId = 10

weight = 25

size = 4.8

destination = {row: 15, col: 12}

truck: empty truck

CASE2:

packageId = 20

weight = 10

size = 2.2

destination = {row: 8, col: 18}

truck: truck with existing packages

CASE3:

packageId = 30

weight = 0

size = 0.0

destination = {row: 0, col: 0}

truck: empty truck

CASE4:

packageId = 40

weight = 18

size = 6.5

destination = {row: 20, col: 30}

truck: truck with weight limit reached

CASE5:

packageId = 50

weight = 20

size = 5.0

destination = {row: 10, col: 15}

truck: truck with capacity limit reached

Test Data for createTruck():

CASE1:

truckId = 101

weight = 4500

size = 19.0

route: {source: "A", destination: "B"}

packages: NULL (or an empty array)

CASE2:

truckId = 202

weight = 2000

size = 12.0

route: {source: "C", destination: "D"}

packages: NULL (or an empty array)

CASE3:

truckId = 303

weight = 3500

size = 15.2

route: {source: "E", destination: "F"}

packages: [pkg11, pkg12, pkg13] (an array of package objects)

CASE4:

truckId = 404

weight = 1800

size = 8.5

route: {source: "G", destination: "H"}

packages: NULL (or an empty array)

CASE5:

truckId = 505

weight = 4200

size = 18.0

route: NULL

packages: NULL (or an empty array)

Test Data for validateTruck():

CASE1:

Truck: weight = 4500, size = 19.0

Package: weight = 10, size = 5.5

CASE2:

Truck: weight = 2000, size = 12.0

Package: weight = 0, size = 0.0

CASE3:

Truck: weight = 3500, size = 15.2

Package: weight = 20, size = 10.5

CASE4:

Truck: weight = 1800, size = 8.5 (already containing packages with total weight = 1500, total size = 6.0)

Package: weight = 500, size = 5.0

CASE5:

Truck: weight = 4200, size = 18.0

Package: weight = 3500, size = 14.5