

```
/Library/Java/JavaVirtualMachines/jdk-13.0.1.jdk/Contents/Home/bin/java "-javaagent:/Applications/IntelliJ
IDEA CE.app/Contents/lib/idea_rt.jar=53637:/Applications/IntelliJ IDEA CE.app/Contents/bin" -
Dfile.encoding=UTF-8 -classpath "/Users/lanshunfang/Documents/NEU-Courses-Courses/Program Structure -
Algorithms/alg-hw/out/production/alg-hw" org.neu.alg.hw.hw6.BigNumberTester
```

Java version used for this program is 13.0.1

BigNumberTester.java starts

-----Basic-----

a = 789

b = 7

c = 123456789012345678901234567890123456789012345678901234567890

d = 123456789012345678901234567890123456789012345678901234567890

-----Addition-----

a = 9789

b = 100000

a + b = c = 109789

a = a + b = 109789

d = 3490529510847650949147849619903898133417764638493387843990820577

e = 32769132993266709549961988190834461413177642967992942539798288533

f = 36259662504114360499109837810738359546595407606486330383789109110

-----subtraction-----

----- 5992 - 5994 -----

a = 5992

b = 5994

c = -2

----- 69 - 69 -----

a = 69

b = 69

c = 0

----- 69 - 0 -----

a = 69

b = 0

c = 69

----- 0 - 69 -----

a = 0

b = 69

c = -69

----- 85 - 69 -----

a = 85

b = 69

c = 16

----- 69 - 85 -----

a = 69

b = 85

c = -16

----- 92 - 8 -----

a = 92

b = 8

c = 84

----- 8 - 92 -----

a = 8

b = 92

c = -84

----- 739268 - 268495 -----

a = 739268

b = 268495

c = 470773

----- 29649 - 739260 -----

a = 29649

b = 739260

c = -709611

----- 31916 - 7503 -----

a = 31916

b = 7503

c = 24413

----- 20452 - 16367 -----

a = 20452

b = 16367

c = 4085

----- 16367 - 20452 -----

a = 16367

b = 20452

c = -4085

----- 20569 - 19996 -----

a = 20569

b = 19996

c = 573

----- 19996 - 20569 -----

a = 19996

b = 20569

c = -573

----- RSA -----

a = 3490529510847650949147849619903898133417764638493387843990820577

b = 32769132993266709549961988190834461413177642967992942539798288533  
c = -29278603482419058600814138570930563279759878329499554695807467956

----- RSA -----

a = 32769132993266709549961988190834461413177642967992942539798288533  
b = 3490529510847650949147849619903898133417764638493387843990820577  
c = 29278603482419058600814138570930563279759878329499554695807467956

----- RSA -----

a = 0

b = 32769132993266709549961988190834461413177642967992942539798288533  
c = -32769132993266709549961988190834461413177642967992942539798288533

----- RSA -----

a = 3490529510847650949147849619903898133417764638493387843990820577  
b = 3490529510847650949147849619903898133417764638493387843990820577  
c = 0

----- RSA -----

a = 1

b = 3490529510847650949147849619903898133417764638493387843990820577  
c = -3490529510847650949147849619903898133417764638493387843990820576

-----mult-----

a = 9789

zero = 0

one = 1

b =  $a \cdot 0 = 0$

c =  $0 \cdot a = 0$

d =  $a \cdot 1 = 9789$

e =  $1 \cdot a = 9789$

a = 9789

b = 9

c = 88101

d = 88101

a = 18379

b = 14180

c = 260614220

d = 260614220

a = 23697

b = 2688

c = 63697536

d = 63697536

a = 19137

b = 26732

c = 511570284



**b**

0202387260077093773543702433923003985719374864210714632543799910429938512398629020592044  
208486969404800479988610197196058631666872994808558901323829669944590997424504087073759  
918823627727188732519779505950995276120874975462497043601418278094646496291056393887437  
886487337119181045825783647849977012476632889835955735432513185323958463075557409114262  
417474349347553428646576611667797396668820291207379143853719588249808126867838374559731  
746136085379534524221586593201928090878297308431392844403281231558611036976801357304216  
168747609675871348312025478589320767169132448426236131412508780208000261683151027341827  
977704784635868170164365024153691398281264810213092761244896359928705114964975419909342  
221566832572080821333186116811553615836546984046708975602900950537616475847728421889679  
646244945160765353408198901385442487984959953319101723355556602139450399736280750137837  
615307127761926849034352625200015888535147331611702103968175921510907788019393178114194  
545257223865541461062892187960223838971476088506276862967146674697562911234082439208160  
153780889893964518263243671616762179168909779911903754031274622289988005195444414282012  
187361745992642956581746628302955570299024324153181617210465832036786906117260158783520  
751516284225540265170483304226143974286933061690897968482590125458327168226458066526769  
958652682272807075781391858178889652208164348344825993266043367660176999612831860788386  
150279465955131156552036093988180612138558600301435694527224206344631797460594682573103  
790084024432438465657245014402821885252470935190620929023136493273497565513958720559654  
228749774011413346962715422845862377387538230483865688976461927383814900140767310446640  
259899490222221765904339901886018566526485061799702356193897017860040811889729918311021  
171229845901641921068884387121855646124960798722908519296819372388642614839657382291123  
125024186649353143970137428531926649875337218940694281434118520158014123344828015051399  
694290153483077644569099073152433278288269864602789864321139083506217095002597389863554  
277196742822248757586765752344220207573630569498825087968928162753848863396909959826280

956121450994871701244516461260379029309120889086942028510640182154399457156805941872748  
998094254742173582401063677404595741785160829230135358081840096996372524230560855903700  
624271243416909004153690105933983835777939410970027753472000000000000000000000000000000  
000  
000  
000

RUN time for !1000 = 4.164465473

BigNumberTester.java ends

Process finished with exit code 0