Name: _____ Date: _____

Division Worksheet

dmsb

1 a.

```
                5
   1 2 4 4 2 6 4 9 4
8) 9 9 5 4 0 3 9 5 2
  -8
   1 9
  -1 6
     3 5
    -3 2
       3 4
      -3 2
         2 0
        -1 6
           4 3
          -4 0
             3 9
            -3 2
               7 5
              -7 2
                 3 2
                -3 2
                   Ø
```

$\boxed{= 124\ 425\ 494}$

1 b.

```
   0 3 3 7 7 9 8 8 6
7) 2 3 6 4 5 9 2 0 2
  -0
   2 3
  -2 1
     2 6
    -2 1
       5 4
      -4 9
         5 5
        -4 9
           6 9
          -6 3
             6 2
            -5 6
               6 0
              -5 6
                4 2
               -4 2
                   Ø
                   R
```

$\boxed{= 33\ 779\ 886}$

Ø to show no Remainder and that we're all done

NOTE:

*UNTIL confident with all DMSB steps, STUDENTS ARE ASKED TO NOT SKIP THE FIRST CYCLE when the divisor is larger than the first digit of the DIVIDEND.

↳ # doing the dividing

↳ # being divided

EX:

```
      .3
7 | 236
    21
     2
```

← Normally, you'd just skip ahead and start by dividing 23 by 7. To practise the DMSB cycle, we're asking them to do as I showed above in 1B.

```
      0
7 | 236
    0
   23
```

dMSB

Division Worksheet

1a.

```
   0 8 1 6 6 4 8 5 5
9) 7 3 4 9 8 3 6 9 5
  -0
   7 3
  -7 2
     1 4
     - 9
       5 9
      -5 4
         5 8
        -5 4
           4 3
          -3 6
             7 6
            -7 2
               4 9
              -4 5
                 4 5
                -4 5
                   Ø
```

$\boxed{= 81664855}$

1b.

```
                 9
   0 5 8 2 2 9 7 4 6
5) 2 9 1 1 4 8 7 3 0
  -0
   2 9
  -2 5
     4 1
    -4 0
       1 1
      -1 0
         1 4
        -1 0
           4 8
          -4 5
             3 7
            -3 5
               2 3
              -2 0
                3 0
               -3 0
                  Ø
```

$\boxed{= 58\ 229\ 746}$

NOTE

WHEN DOING LONG DIVISION, IT'S IMPORTANT THAT WE WRITE OUR digits in the RIGHT PLACE. when writing #'s in the QUOTIENT AREA, WE MUST WRITE THEM ABOVE the # we just divided into, quotient / divisor) dividend

EX:

2) 68 (6÷2=3)

SO... WE WRITE the "3" ABOVE THE "6" BECAUSE that's what we just DIVIDED into. This also helps us NOT forget WHERE WE ARE in the PROBLEM.

Name: _____ Date: _____

DMSB

Division Worksheet

3 a.

```
      1 4 2 2 3 4 4 6 5
4) 5 6 8 9 3 7 8 6 0
   -4
    1 6
   -1 6
      0 8
      - 8
        0 9
        -8
          1 3
         -1 2
            1 7
           -1 6
              1 8
             -1 6
               2 6
              -2 4
                2 0
               -2 0
                  Ø
```

3 b.

```
      1 2 8 0 8 4 7 4 3
5) 6 4 0 4 2 3 7 1 5
   -5
    1 4
   -1 0
      4 0
     -4 0
        0 4
        -0
          4 2
         -4 0
            2 3
           -2 0
              3 7
             -3 5
               2 1
              -2 0
                1 5
               -1 5
                  Ø
```

NOTE! AS STUDENTS COMPLETE THEIR WORK, IT'S IMPORTANT that they CHECK their WORK AS they go. This is ESPECIALLY IMPORTANT with Long Division. AFTER they've done the SUBTRACTION STEP of DMSB, they have to CHECK to make sure the # they have left (Before BRINGING DOWN the NEXT digit) is LESS than the DIVISOR. IF IT'S LARGER, then they know they've MADE A MISTAKE with the DIVIDE STEP of DMSB. EX:

```
      6
4 | 295
   -24
     5
```

5 > 4. This means my divisor can make another group, meaning the # I've just written in the QUOTIENT AREA is WRONG

Division Worksheet

dmsb

4 a.

```
        1 6 7 9 9 1 0 5 6
5) 8 3 9 9 5 5 4 3 0
   -5
    3 3
   -3 0
      3 9
     -3 5
        4 9
       -4 5
          4 5
         -4 5
            0 5
           -5
             0 4
             -0
              4 3
             -4 0
                3 0
               -3 0
                  0
```

$\boxed{= 167\ 991\ 056}$

4 b.

```
        0 8 4 5 7 8 8 4 0
9) 7 6 1 2 0 9 5 6 0
   -0
    7 6
   -7 2
      4 1
     -3 6
        5 2
       -4 5
          7 0
         -6 3
            7 9
           -7 2
              7 5
             -7 2
                3 6
               -3 6
                  0 0
                  -0
                    0
```

$\boxed{= 84\ 578\ 840}$

NOTE:

AFTER BRINGING DOWN THE NEXT DIGIT FROM THE DIVIDEND, THE DMSB CYCLE RESTARTS. MANY STUDENTS MAKE THE MISTAKE OF DIVIDING THE WRONG #, OR NOT KNOWING WHERE/WHAT TO DIVIDE. THE ONLY # YOU WILL BE DIVIDING WITH, FOR THE ENTIRE QUESTION, IS THE DIVISOR. THE # THAT THE DIVISOR IS DIVIDED INTO IS MADE FROM THE REMAINDER OF THE SUBTRACTION STEP OF DMSB AND THE DIGIT BROUGHT DOWN FROM THE DIVIDEND. THE 2 DIGIT OR 1 DIGIT # THAT YOU HAVE AFTER BRINGING DOWN IS WHAT YOU USE TO START A NEW ROUND OF DMSB. I HAVE HIGHLIGHTED THESE #'S IN BOTH ABOVE QUESTIONS.

Name: _____ Date: _____

Division Worksheet

dmsb

5a.

```
        1 0 3 2 2 4 4 4 9
7) 7 2 2 5 7 1 1 4 3
   -7
    0 2
     -0
      2 2
     -2 1
        1 5
       -1 4
          1 7
         -1 4
            3 1
           -2 8
             3 1
            -2 8
              3 4
             -2 8
               6 3
              -6 3
                 Ø
```

= 103 224 449

5b.

```
        1 5 8 1 5 6 7 9 7
3) 4 7 4 4 7 0 3 9 1
   -3
    1 7
    1 5
      2 4
     -2 4
        0 4
       -3
         1 7
        -1 5
          2 0
         -1 8
           2 3
          -2 1
            2 9
           -2 7
             2 1
            -2 1
                Ø
```

= 158 156 797

NOTE:

Students have been asked to draw the arrow when bringing down. This helps them keep things lined up properly as well as making sure they bring down the # they're supposed to bring down. When drawing the arrow, they've been asked to draw the "arrowhead" so that they don't confuse it with a 1 on the first cycle. EX:

```
      1
7 | 720
   -71
    02
```

← without "arrowhead" it could confuse them as they begin the cycles.

Name: _____ Date: _____

Division Worksheet

6a.

```
   2 9 2 3 7 5 1 1 3
3) 8 7 7 1 2 5 3 3 9
  -6
   2 7
  -2 7
     0 7
    -6
     1 1
    - 9
       2 2
      -2 1
         1 5
        -1 5
           0 3
          -3
           0 3
          -3
           0 9
           -9
            Ø
```

$\boxed{= 292\ 375\ 113}$

6b.

```
   0 8 2 6 7 6 1 5 3
3) 2 4 8 0 2 8 4 5 9
  -0
   2 4
  -2 4
     0 8
    -6
     2 0
    -1 8
       2 2
      -2 1
         1 8
        -1 8
           0 4
          -3
           1 5
          -1 5
           0 9
           -9
            Ø
```

$\boxed{= 82\ 676\ 153}$