Aug 28.

Restoring.

$11/3$ $\qquad$ Quotient

$$D = N \cdot Q + R$$

Dividend

Divisor

Remainder:

$1011 / 0011$ $\qquad$ D $\boxed{1\ 0\ 1\ 1}$

$Q = 0011$

$R = 0010$

NQ $\left(+ \begin{array}{c} 0\ 1\ 1\ 0 \\ 0\ 0\ 1\ 1 \end{array} \right)$
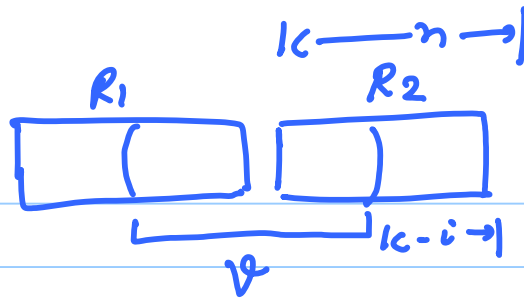
Non-restoring

$$R_1 R_2 = V \times 2^i$$

Restoring Step: $V \times 2^i - N \times 2^n$

Non-restoring next step: $V \times 2^{i+1} - N \times 2^{n+1}$

Add: $N \times 2^n$

$$= V \times 2^{i+1} - N \times 2^n$$

Restoring next step: $V \times 2^{i+1} - N \times 2^n$

7/3

0111 / 0011

| 0000 | | 0111 |

① | 0000 | | 111 |
  + 1101 (-3)

| 1101 | | 1110 |

② | 1011 | | 110 |
  + 11

| 1110 | | 1100 |

③ | 1 1 0 1 | | 1 0 0 |

$+ 11$

| 0 0 0 0 | | 1 0 0 1 |

④ | 0 0 0 1 | | 0 0 1 |
| 1 1 0 1 |

| 1 1 1 0 | | 0 0 1 0 |

$+ 11$

| 0 0 0 |

Chapter 1.

$\longrightarrow$ Instruction:

Static.

(32 bit seq
$\leftrightarrow$ line of
assembly
code)

dynamic
(instance of
a static
instruction)

$\longrightarrow$ Clock cycle

|←————→|
clock period

$a = b \times c$
$d = a + f$
$c = e + d$
$f = c \times 2$
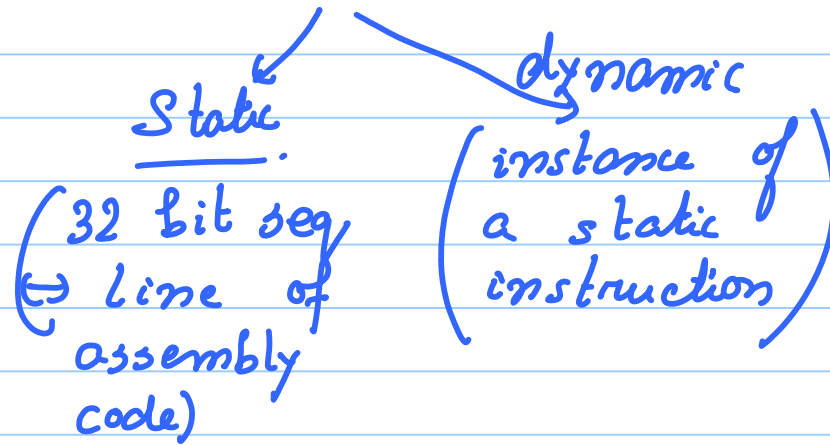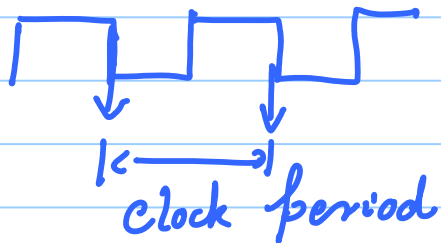
$$\text{Clock frequency}: \frac{1}{\text{clock-period}}$$