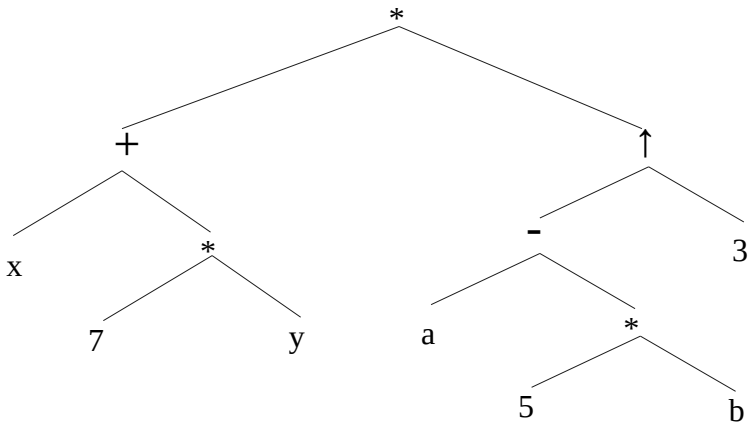
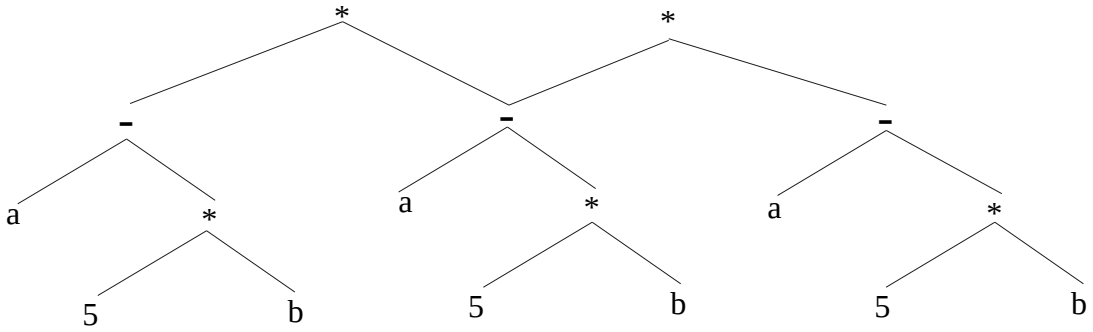
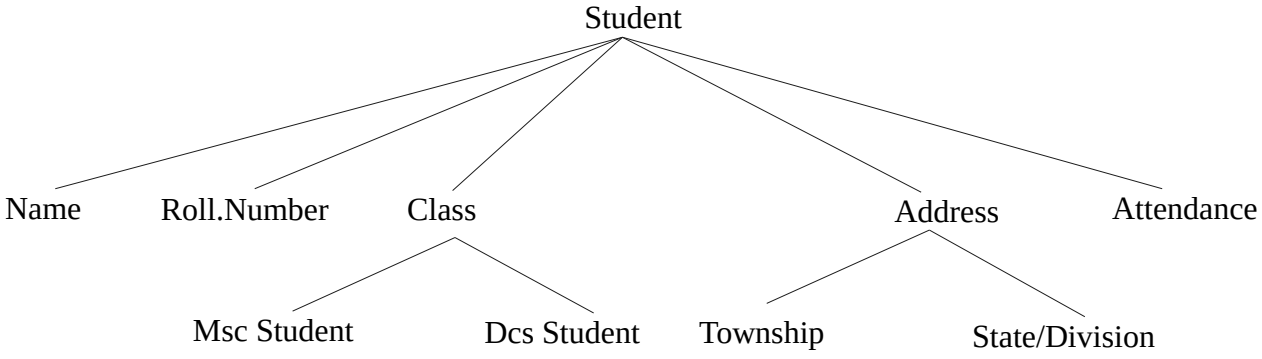
(a)$(x + 7y)(a - 5b)^3$



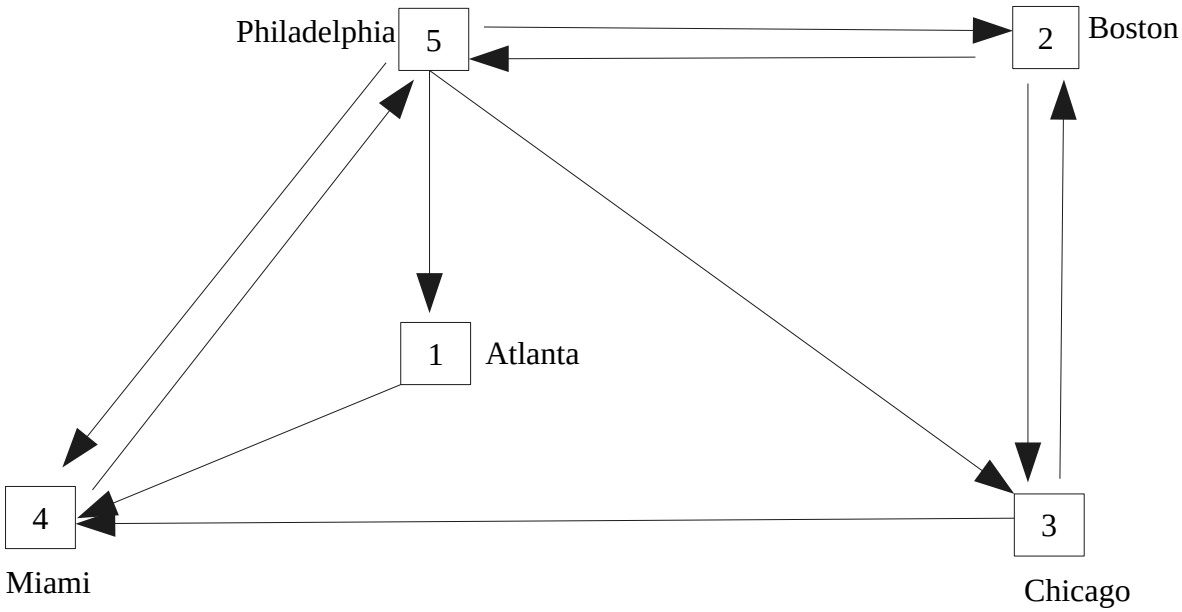
$(a - 5b)^3 = (a - 5b)(a - 5b)(a - 5b)$



(b)



(c)



(d)

(i)

$\lfloor 85 \rfloor = 85$

$\lfloor -8.5 \rfloor = -9$

$\lfloor -14 \rfloor = -14$

$\lfloor \sqrt{20} \rfloor = 4$

$\lfloor \sqrt[3]{35} \rfloor = 3$

$\lfloor \prod \rfloor = 3$

(ii)

$\lceil 8.5 \rceil = 9$

$\lceil -8.5 \rceil = -8$

$\lceil -14 \rceil = -14$

$\lceil \sqrt{20} \rceil = 5$

$\lceil \sqrt[3]{35} \rceil = 4$

$\lceil \prod \rceil = 4$

(e)

(i)

$26 \pmod 4 = 2$

$34 \pmod 5 = 4$

$2345 \pmod 3 = 2$

$494 \pmod{11} = 10$

(ii)

-26 (mod 4) = -2
-2345 (mod 5) = 0
-371 (mod 7) = 0
-39 (mod 3) = 0

(f)

(i)

$3^{-4} = 1/ 3^4 = 1/81 = 0.0123456$

$4^{7/2} = \sqrt[2]{4^7} = \sqrt[2]{2^{14}} = 2^7 = 128$

$27^{-2/3} = 0.11111$

(ii)

Let,

$\log_2 64 = y$

$2^y = 64$

$2^y = 2^6$

$y = 6$

Ans. 6

Let,

$\log_{10} 0.001 = y$

$10^y = 0.001$

$10^y = 10^{-3}$

$y = -3$

Ans. -3

Let,

$\log_2 1/8 = y$

$2^y = 1/8$

$2^y = 2^{-3}$

$y = -3$

Ans. -3

(iii)

$\lfloor \log 1000000 \rfloor = 19$

Since $2^{19} = 524288$ and $2^{20} = 1048576$

$\lceil \log 0.001 \rceil = -9$

Since $2^{-9} = 0.001953$ and $2^{-20} = 0.00097$