

Design Name	Graph Decomposition
$\mathbf{T}_7^1 \sqcup \mathbf{T}_2^1$	$(0, 1, 2, 4, 6, 9, 12) \sqcup (13, 14)$ $(3, 4, 7, 9, 10, 13, 15) \sqcup (8, 5)$ $(8, 11, 12, 10, 7, 5, 6) \sqcup (1, 3)$ $(0, 4, 9, 15, 8, 16, 7) \sqcup (1, 11)$
$\mathbf{T}_7^3 \sqcup \mathbf{T}_2^1$	$(12, 9, 6, 4, 2, 1, 7) \sqcup (14, 15)$ $(15, 13, 10, 9, 7, 4, 11) \sqcup (8, 5)$ $(8, 11, 12, 10, 7, 5, 13) \sqcup (1, 3)$ $(16, 8, 15, 9, 4, 0, 6) \sqcup (1, 11)$
$\mathbf{T}_7^2 \sqcup \mathbf{T}_2^1$	$(0, 1, 2, 4, 6, 9, 3) \sqcup (16, 19)$ $(15, 13, 10, 9, 7, 4, 14) \sqcup (17, 18)$ $(6, 5, 7, 10, 12, 11, 8) \sqcup (18, 15)$ $(7, 16, 8, 15, 9, 4, 12) \sqcup (1, 11)$
$\mathbf{T}_7^4 \sqcup \mathbf{T}_2^1$	$(8, 6, 4, 2, 1, 9, 7) \sqcup (14, 15)$ $(8, 10, 9, 7, 4, 11, 13) \sqcup (12, 15)$ $(9, 12, 10, 7, 5, 11, 13) \sqcup (1, 4)$ $(7, 15, 9, 4, 0, 8, 6) \sqcup (1, 11)$
$\mathbf{T}_7^5 \sqcup \mathbf{T}_2^1$	$(2, 4, 6, 9, 12, 8, 7) \sqcup (11, 14)$ $(0, 2, 3, 6, 5, 1, 4) \sqcup (8, 7)$ $(0, 3, 5, 4, 1, 8, 7) \sqcup (16, 15)$ $(4, 9, 15, 8, 12, 6, 7) \sqcup (1, 11)$
$\mathbf{T}_7^8 \sqcup \mathbf{T}_2^1$	$(1, 2, 4, 6, 8, 5, 9) \sqcup (12, 15)$ $(4, 7, 9, 10, 11, 8, 13) \sqcup (1, 3)$ $(5, 7, 10, 12, 11, 6, 13) \sqcup (1, 4)$ $(0, 4, 9, 15, 8, 12, 6) \sqcup (1, 11)$
$\mathbf{T}_7^9 \sqcup \mathbf{T}_2^1$	$(8, 6, 4, 2, 5, 9, 7) \sqcup (12, 14)$ $(1, 3, 2, 0, 5, 4, 6) \sqcup (10, 12)$ $(9, 8, 7, 10, 4, 11, 5) \sqcup (12, 13)$ $(7, 15, 9, 4, 13, 8, 6) \sqcup (1, 11)$
$\mathbf{T}_7^{10} \sqcup \mathbf{T}_2^1$	$(7, 6, 4, 2, 8, 9, 5) \sqcup (12, 14)$ $(2, 3, 4, 7, 0, 5, 6) \sqcup (9, 12)$ $(7, 8, 5, 4, 9, 10, 11) \sqcup (0, 2)$ $(6, 15, 9, 4, 8, 11, 7) \sqcup (2, 12)$
$\mathbf{T}_7^6 \sqcup \mathbf{T}_2^1$	$(2, 4, 6, 8, 7, 9, 12) \sqcup (13, 14)$ $(0, 2, 3, 4, 7, 6, 5) \sqcup (8, 10)$ $(0, 3, 5, 8, 9, 4, 1) \sqcup (12, 14)$ $(4, 9, 15, 8, 12, 7, 16) \sqcup (1, 11)$
$\mathbf{T}_7^7 \sqcup \mathbf{T}_2^1$	$(2, 4, 6, 9, 12, 1, 8) \sqcup (14, 15)$ $(5, 6, 3, 2, 0, 7, 4) \sqcup (8, 9)$ $(0, 3, 5, 4, 7, 1, 8) \sqcup (12, 14)$ $(4, 9, 15, 8, 12, 18, 7) \sqcup (1, 11)$
$\mathbf{T}_6^1 \sqcup \mathbf{T}_3^1$	$(1, 2, 4, 6, 9, 12) \sqcup (13, 14, 15)$ $(3, 4, 7, 9, 10, 13) \sqcup (5, 8, 6)$ $(11, 12, 10, 7, 5, 6) \sqcup (3, 1, 4)$ $(0, 4, 9, 15, 8, 16) \sqcup (1, 11, 2)$

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$\mathbf{T}_6^2 \sqcup \mathbf{T}_3^1$	$(1, 2, 4, 6, 9, 5) \sqcup (13, 14, 15)$ $(13, 10, 9, 7, 4, 11) \sqcup (5, 8, 6)$ $(11, 12, 10, 7, 5, 13) \sqcup (3, 1, 4)$ $(0, 4, 9, 15, 8, 12) \sqcup (1, 11, 2)$
$\mathbf{T}_6^3 \sqcup \mathbf{T}_3^1$	$(0, 1, 2, 4, 6, 5) \sqcup (16, 13, 14)$ $(8, 6, 3, 2, 0, 4) \sqcup (14, 12, 15)$ $(7, 4, 5, 3, 0, 6) \sqcup (10, 8, 11)$ $(7, 0, 4, 9, 15, 12) \sqcup (1, 11, 2)$
$\mathbf{T}_6^4 \sqcup \mathbf{T}_3^1$	$(1, 2, 5, 4, 6, 7) \sqcup (16, 14, 13)$ $(8, 6, 9, 3, 2, 4) \sqcup (14, 12, 15)$ $(4, 5, 6, 3, 0, 1) \sqcup (11, 8, 7)$ $(7, 0, 6, 4, 9, 12) \sqcup (1, 11, 2)$
$\mathbf{T}_6^5 \sqcup \mathbf{T}_3^1$	$(0, 2, 4, 7, 1, 5) \sqcup (12, 11, 13)$ $(7, 6, 3, 2, 8, 9) \sqcup (14, 12, 15)$ $(4, 3, 5, 6, 0, 1) \sqcup (11, 8, 7)$ $(8, 0, 4, 9, 6, 7) \sqcup (1, 11, 2)$
$\mathbf{T}_6^6 \sqcup \mathbf{T}_3^1$	$(0, 2, 1, 3, 4, 5) \sqcup (12, 11, 14)$ $(4, 6, 8, 9, 5, 7) \sqcup (14, 12, 15)$ $(0, 3, 1, 4, 5, 6) \sqcup (11, 8, 7)$ $(4, 0, 8, 5, 6, 7) \sqcup (1, 11, 2)$
$\mathbf{T}_5^1 \sqcup \mathbf{T}_4^1$	$(2, 4, 6, 9, 12) \sqcup (16, 15, 14, 13)$ $(3, 4, 7, 9, 10) \sqcup (11, 12, 15, 13)$ $(12, 10, 7, 5, 6) \sqcup (18, 15, 17, 20)$ $(4, 9, 15, 8, 16) \sqcup (2, 11, 1, 5)$
$\mathbf{T}_5^2 \sqcup \mathbf{T}_4^1$	$(12, 9, 6, 4, 11) \sqcup (17, 16, 15, 14)$ $(9, 7, 4, 3, 6) \sqcup (11, 12, 15, 13)$ $(6, 5, 7, 10, 3) \sqcup (18, 15, 17, 20)$ $(16, 8, 15, 9, 12) \sqcup (2, 11, 1, 6)$
$\mathbf{T}_5^2 \sqcup \mathbf{T}_4^2$	$(4, 6, 9, 11, 8) \sqcup (16, 15, 18, 14)$ $(9, 7, 4, 3, 6) \sqcup (16, 17, 20, 15)$ $(6, 5, 7, 10, 3) \sqcup (9, 12, 11, 15)$ $(16, 8, 15, 9, 12) \sqcup (10, 1, 11, 6)$
$\mathbf{T}_5^3 \sqcup \mathbf{T}_4^1$	$(13, 15, 16, 18, 14) \sqcup (11, 9, 6, 7)$ $(14, 17, 16, 20, 15) \sqcup (9, 7, 4, 3)$ $(9, 12, 10, 11, 15) \sqcup (4, 6, 5, 7)$ $(5, 1, 10, 11, 6) \sqcup (16, 8, 15, 9)$
$\mathbf{T}_5^1 \sqcup \mathbf{T}_4^2$	$(7, 6, 9, 11, 8) \sqcup (16, 15, 13, 14)$ $(9, 7, 4, 3, 5) \sqcup (16, 17, 20, 15)$ $(4, 6, 5, 7, 10) \sqcup (9, 12, 11, 15)$ $(16, 8, 15, 9, 5) \sqcup (10, 1, 11, 6)$
$\mathbf{T}_5^3 \sqcup \mathbf{T}_4^2$	$(13, 15, 16, 18, 14) \sqcup (11, 9, 12, 6)$ $(18, 17, 16, 20, 15) \sqcup (9, 7, 10, 4)$ $(10, 12, 11, 14, 15) \sqcup (4, 6, 5, 7)$ $(5, 1, 10, 11, 6) \sqcup (16, 8, 14, 15)$

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$\mathbf{T}_6^1 \sqcup 2\mathbf{T}_2^1$	(1, 2, 4, 6, 9, 12) \sqcup (13, 14) \sqcup (8, 7) (3, 4, 7, 9, 10, 13) \sqcup (8, 6) \sqcup (12, 15) (11, 12, 10, 7, 5, 6) \sqcup (1, 4) \sqcup (17, 15) (0, 4, 9, 15, 8, 16) \sqcup (1, 11) \sqcup (3, 12)
$\mathbf{T}_6^2 \sqcup 2\mathbf{T}_2^1$	(1, 2, 4, 6, 9, 5) \sqcup (13, 14) \sqcup (8, 7) (13, 10, 9, 7, 4, 11) \sqcup (8, 6) \sqcup (12, 15) (11, 12, 10, 7, 5, 13) \sqcup (1, 4) \sqcup (17, 15) (0, 4, 9, 15, 8, 12) \sqcup (1, 11) \sqcup (5, 14)
$\mathbf{T}_6^3 \sqcup 2\mathbf{T}_2^1$	(0, 1, 2, 4, 7, 5) \sqcup (9, 6) \sqcup (8, 10) (8, 6, 3, 2, 0, 4) \sqcup (5, 7) \sqcup (12, 13) (6, 4, 5, 3, 0, 8) \sqcup (13, 14) \sqcup (18, 15) (7, 0, 4, 9, 15, 12) \sqcup (1, 11) \sqcup (5, 14)
$\mathbf{T}_6^4 \sqcup 2\mathbf{T}_2^1$	(1, 2, 5, 4, 6, 7) \sqcup (13, 14) \sqcup (12, 15) (8, 6, 9, 3, 2, 4) \sqcup (12, 14) \sqcup (18, 15) (4, 5, 6, 3, 0, 1) \sqcup (8, 7) \sqcup (16, 14) (7, 0, 6, 4, 9, 12) \sqcup (1, 11) \sqcup (5, 14)
$\mathbf{T}_6^5 \sqcup 2\mathbf{T}_2^1$	(0, 2, 4, 7, 1, 5) \sqcup (11, 13) \sqcup (12, 15) (7, 6, 3, 2, 8, 9) \sqcup (11, 12) \sqcup (1, 4) (4, 3, 5, 6, 0, 1) \sqcup (8, 7) \sqcup (12, 14) (8, 0, 4, 9, 6, 7) \sqcup (1, 11) \sqcup (5, 14)
$\mathbf{T}_6^6 \sqcup 2\mathbf{T}_2^1$	(0, 2, 1, 3, 4, 5) \sqcup (12, 14) \sqcup (18, 19) (4, 6, 8, 9, 5, 7) \sqcup (12, 15) \sqcup (11, 14) (0, 3, 1, 4, 5, 6) \sqcup (8, 11) \sqcup (14, 15) (4, 0, 8, 5, 6, 7) \sqcup (1, 11) \sqcup (3, 12)
$\mathbf{T}_5^1 \sqcup \mathbf{T}_3^1 \sqcup \mathbf{T}_2^1$	(2, 4, 6, 9, 12) \sqcup (13, 14, 15) \sqcup (18, 19) (3, 4, 7, 9, 10) \sqcup (12, 15, 13) \sqcup (1, 2) (12, 10, 7, 5, 6) \sqcup (20, 17, 15) \sqcup (1, 4) (4, 9, 15, 8, 16) \sqcup (11, 1, 5) \sqcup (3, 12)
$\mathbf{T}_5^2 \sqcup \mathbf{T}_3^1 \sqcup \mathbf{T}_2^1$	(12, 9, 6, 4, 11) \sqcup (17, 16, 15) \sqcup (0, 1) (9, 7, 4, 3, 6) \sqcup (12, 15, 13) \sqcup (18, 19) (6, 5, 7, 10, 3) \sqcup (20, 17, 15) \sqcup (1, 4) (16, 8, 15, 9, 12) \sqcup (1, 11, 2) \sqcup (0, 5)
$\mathbf{T}_5^3 \sqcup \mathbf{T}_3^1 \sqcup \mathbf{T}_2^1$	(13, 15, 16, 18, 14) \sqcup (9, 6, 7) \sqcup (2, 4) (14, 17, 16, 20, 15) \sqcup (3, 4, 7) \sqcup (11, 13) (9, 12, 10, 11, 15) \sqcup (6, 5, 7) \sqcup (0, 2) (5, 1, 10, 11, 6) \sqcup (8, 15, 9) \sqcup (4, 12)
$2\mathbf{T}_4^1 \sqcup \mathbf{T}_2^1$	(4, 6, 9, 12) \sqcup (16, 15, 14, 13) \sqcup (19, 20) (9, 7, 4, 3) \sqcup (11, 12, 15, 13) \sqcup (16, 17) (12, 10, 7, 5) \sqcup (18, 15, 17, 20) \sqcup (9, 11) (9, 15, 8, 16) \sqcup (2, 11, 1, 5) \sqcup (12, 7)
$\mathbf{T}_4^1 \sqcup \mathbf{T}_4^2 \sqcup \mathbf{T}_2^1$	(11, 9, 6, 7) \sqcup (16, 15, 13, 14) \sqcup (1, 4) (5, 3, 4, 7) \sqcup (16, 17, 20, 15) \sqcup (0, 2) (4, 6, 5, 7) \sqcup (9, 12, 11, 15) \sqcup (0, 3) (16, 8, 15, 9) \sqcup (10, 1, 11, 6) \sqcup (0, 4)

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$2\mathbf{T}_4^2 \sqcup \mathbf{T}_2^1$	$(18, 15, 13, 14) \sqcup (11, 9, 12, 6) \sqcup (1, 2)$ $(18, 17, 20, 15) \sqcup (9, 7, 10, 4) \sqcup (2, 3)$ $(11, 12, 14, 15) \sqcup (4, 6, 5, 7) \sqcup (17, 19)$ $(11, 1, 5, 6) \sqcup (16, 8, 14, 15) \sqcup (0, 9)$
$\mathbf{T}_4^1 \sqcup 2\mathbf{T}_3^1$	$(16, 15, 14, 13) \sqcup (0, 3, 5) \sqcup (12, 9, 6)$ $(11, 12, 15, 13) \sqcup (10, 9, 7) \sqcup (16, 18, 20)$ $(18, 15, 17, 20) \sqcup (10, 11, 14) \sqcup (6, 5, 7)$ $(2, 12, 3, 11) \sqcup (8, 1, 7) \sqcup (4, 0, 5)$
$\mathbf{T}_4^2 \sqcup 2\mathbf{T}_3^1$	$(11, 9, 12, 6) \sqcup (18, 15, 13) \sqcup (0, 1, 2)$ $(9, 7, 10, 4) \sqcup (18, 17, 20) \sqcup (1, 3, 2)$ $(11, 12, 14, 15) \sqcup (4, 6, 7) \sqcup (17, 19, 20)$ $(16, 8, 14, 15) \sqcup (11, 1, 6) \sqcup (9, 0, 4)$
$\mathbf{T}_4^1 \sqcup \mathbf{T}_3^1 \sqcup 2\mathbf{T}_2^1$	$(8, 6, 9, 11) \sqcup (0, 1, 2) \sqcup (16, 19) \sqcup (18, 15)$ $(8, 10, 7, 9) \sqcup (18, 17, 20) \sqcup (11, 14) \sqcup (2, 3)$ $(13, 11, 12, 14) \sqcup (17, 19, 20) \sqcup (6, 7) \sqcup (8, 5)$ $(0, 5, 1, 7) \sqcup (3, 10, 2) \sqcup (4, 13) \sqcup (16, 6)$
$\mathbf{T}_4^2 \sqcup \mathbf{T}_3^1 \sqcup 2\mathbf{T}_2^1$	$(11, 9, 12, 6) \sqcup (0, 1, 2) \sqcup (18, 15) \sqcup (13, 14)$ $(9, 7, 10, 4) \sqcup (18, 17, 20) \sqcup (11, 13) \sqcup (2, 3)$ $(11, 12, 14, 15) \sqcup (17, 19, 20) \sqcup (8, 6) \sqcup (1, 3)$ $(4, 0, 5, 6) \sqcup (8, 1, 9) \sqcup (3, 12) \sqcup (17, 7)$
$\mathbf{T}_5^1 \sqcup 3\mathbf{T}_2^1$	$(2, 4, 6, 9, 12) \sqcup (13, 14) \sqcup (18, 19) \sqcup (0, 1)$ $(3, 4, 7, 9, 10) \sqcup (13, 15) \sqcup (1, 2) \sqcup (8, 5)$ $(6, 5, 7, 10, 12) \sqcup (17, 20) \sqcup (8, 11) \sqcup (1, 3)$ $(4, 9, 15, 8, 16) \sqcup (1, 11) \sqcup (3, 12) \sqcup (2, 6)$
$\mathbf{T}_5^2 \sqcup 3\mathbf{T}_2^1$	$(11, 9, 6, 4, 12) \sqcup (16, 15) \sqcup (8, 10) \sqcup (2, 3)$ $(6, 7, 4, 3, 9) \sqcup (13, 15) \sqcup (18, 19) \sqcup (8, 5)$ $(3, 5, 7, 10, 6) \sqcup (17, 20) \sqcup (8, 11) \sqcup (0, 1)$ $(12, 8, 15, 9, 16) \sqcup (2, 11) \sqcup (0, 5) \sqcup (3, 13)$
$\mathbf{T}_5^3 \sqcup 3\mathbf{T}_2^1$	$(13, 15, 16, 18, 14) \sqcup (9, 6) \sqcup (2, 4) \sqcup (5, 7)$ $(14, 17, 16, 20, 15) \sqcup (4, 7) \sqcup (11, 13) \sqcup (5, 6)$ $(9, 12, 10, 11, 15) \sqcup (6, 7) \sqcup (0, 2) \sqcup (3, 4)$ $(5, 1, 10, 11, 6) \sqcup (9, 15) \sqcup (4, 12) \sqcup (0, 7)$
$3\mathbf{T}_3^1 \sqcup \mathbf{T}_2^1$	$(18, 15, 13) \sqcup (11, 9, 6) \sqcup (0, 1, 2) \sqcup (16, 19)$ $(18, 17, 20) \sqcup (9, 7, 10) \sqcup (1, 3, 2) \sqcup (11, 14)$ $(11, 12, 14) \sqcup (4, 6, 7) \sqcup (17, 19, 20) \sqcup (8, 5)$ $(11, 1, 6) \sqcup (16, 8, 14) \sqcup (9, 0, 4) \sqcup (10, 3)$
$\mathbf{T}_4^1 \sqcup 4\mathbf{T}_2^1$	$(9, 6, 4, 2) \sqcup (13, 14) \sqcup (18, 19) \sqcup (0, 1) \sqcup (10, 12)$ $(9, 7, 4, 3) \sqcup (13, 15) \sqcup (1, 2) \sqcup (8, 5) \sqcup (16, 17)$ $(10, 7, 5, 6) \sqcup (17, 20) \sqcup (8, 11) \sqcup (1, 3) \sqcup (9, 12)$ $(9, 15, 8, 16) \sqcup (1, 11) \sqcup (3, 12) \sqcup (2, 6) \sqcup (0, 5)$
$\mathbf{T}_4^2 \sqcup 4\mathbf{T}_2^1$	$(16, 15, 18, 13) \sqcup (9, 6) \sqcup (2, 4) \sqcup (5, 7) \sqcup (0, 1)$ $(16, 17, 20, 14) \sqcup (4, 7) \sqcup (11, 13) \sqcup (5, 6) \sqcup (1, 3)$ $(9, 12, 10, 11) \sqcup (6, 7) \sqcup (0, 2) \sqcup (3, 4) \sqcup (8, 5)$ $(10, 1, 11, 5) \sqcup (9, 15) \sqcup (4, 12) \sqcup (0, 7) \sqcup (8, 3)$

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$2\mathbf{T}_3^1 \sqcup 3\mathbf{T}_2^1$	$(11, 9, 6) \sqcup (0, 1, 2) \sqcup (18, 15) \sqcup (16, 19) \sqcup (17, 20)$ $(9, 7, 10) \sqcup (1, 3, 2) \sqcup (17, 18) \sqcup (11, 14) \sqcup (8, 5)$ $(11, 12, 14) \sqcup (4, 6, 7) \sqcup (19, 20) \sqcup (13, 15) \sqcup (3, 5)$ $(11, 1, 6) \sqcup (16, 8, 14) \sqcup (0, 9) \sqcup (10, 3) \sqcup (17, 13)$
$\mathbf{T}_3^1 \sqcup 5\mathbf{T}_2^1$	$(0, 1, 2) \sqcup (18, 15) \sqcup (9, 11) \sqcup (16, 19) \sqcup (5, 6) \sqcup (10, 7)$ $(1, 3, 2) \sqcup (17, 18) \sqcup (9, 7) \sqcup (11, 14) \sqcup (8, 5) \sqcup (16, 13)$ $(4, 6, 7) \sqcup (12, 14) \sqcup (3, 5) \sqcup (13, 15) \sqcup (17, 20) \sqcup (18, 19)$ $(16, 8, 14) \sqcup (1, 11) \sqcup (0, 9) \sqcup (10, 3) \sqcup (17, 13) \sqcup (2, 7)$

Figure 1: σ^{+-} -labelings for forests with 7 edges