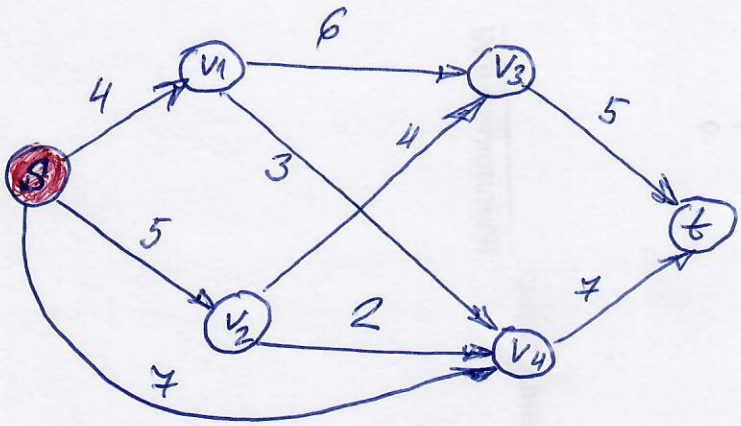
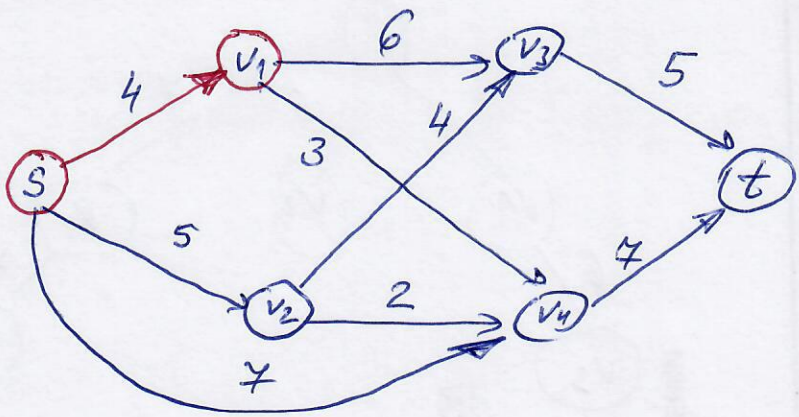
Да се намери най-късият път между s и t за графа $G(V, E)$ от фиг. 10.1



фиг. 10.1

1) $d(s) = 0$, $y = s$

2) $d(v_1) = \boxed{4}$; $d(v_2) = 5$; $d(v_4) = 7$ $\Rightarrow$ $d_{min} = 4$ и $x_{min} = v_1$



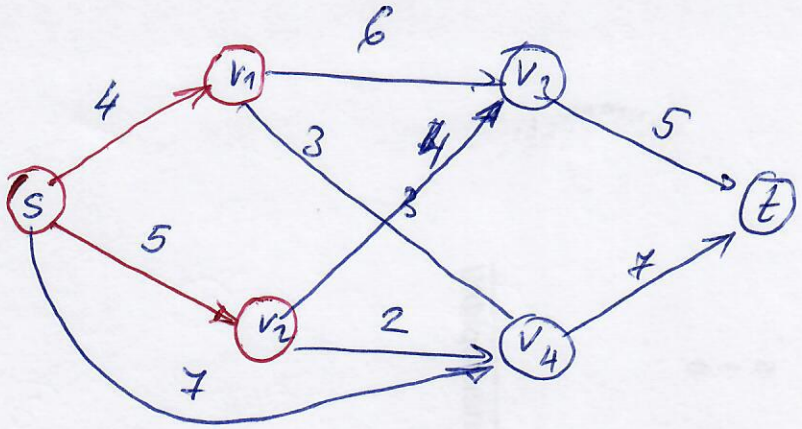
3) $y = v1$ $\quad v1 \rightarrow (v_3, v_4, v_2)$

$d(v_3) = \min(d(v_3), d(v_1) + w(v_1, v_3)) =$
$= \min(\infty, 4 + 6) = 10$

$d(v_4) = \min(d(v_4), d(v_1) + w(v_1, v_4)) =$
$= \min(\infty, 4 + 3) = \boxed{7}$

$d(v_2) = \boxed{5}$ | $d(v_2) = \min(d(v_2), d(v_1) + w(s, v_2)) =$
$= \min(5, 4 + 5) = \min(5, 9)$

$\Rightarrow$ $d_{min} = 5$ и $x_{min} = v_2$



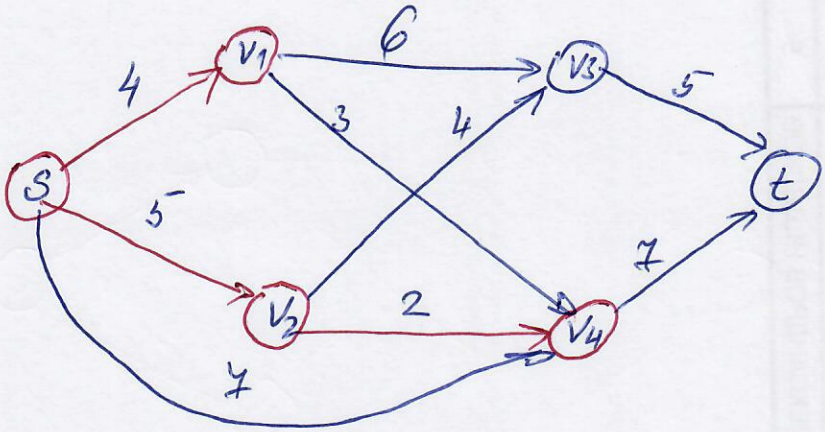
4) $y = v_2$, $v_2 \to (v_3, v_4)$

$d(v_3) = \min(d(v_3), d(v_2) + w(v_2, v_3)) =$

$= \min(\cancel{10}, 5+4) = \cancel{9} \min(10, 9) = 9$

$d(v_4) = \min(d(v_4), d(v_2) + w(v_2, v_4)) =$

$= \min(7, 5+2) = \boxed{7}$

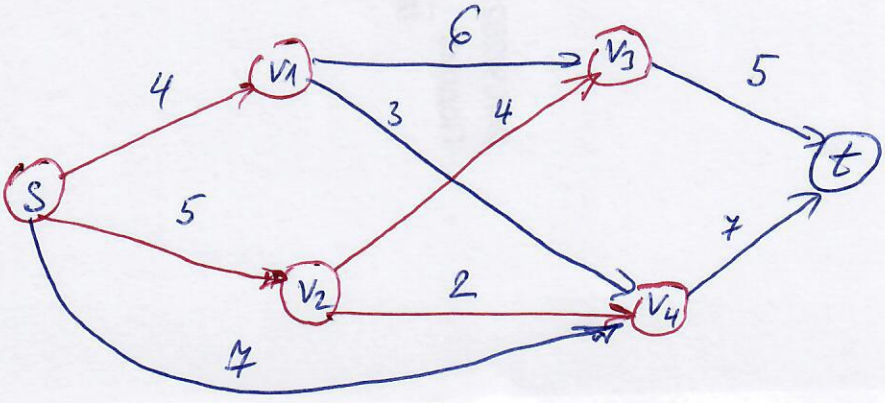


5) $y = v_4$ $\quad v_4 \to \{v_3, t\}$

$d(v_3) = \boxed{9}$

$d(v_t) = \min(d(t), d(v_4) + w(v_4, t)) =$

$= \min(\infty, 7+7) = 14$

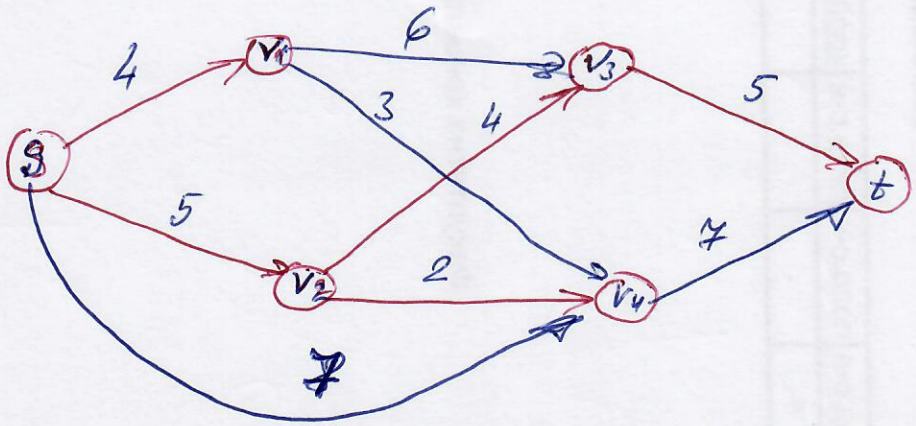


6) $y = v_3$

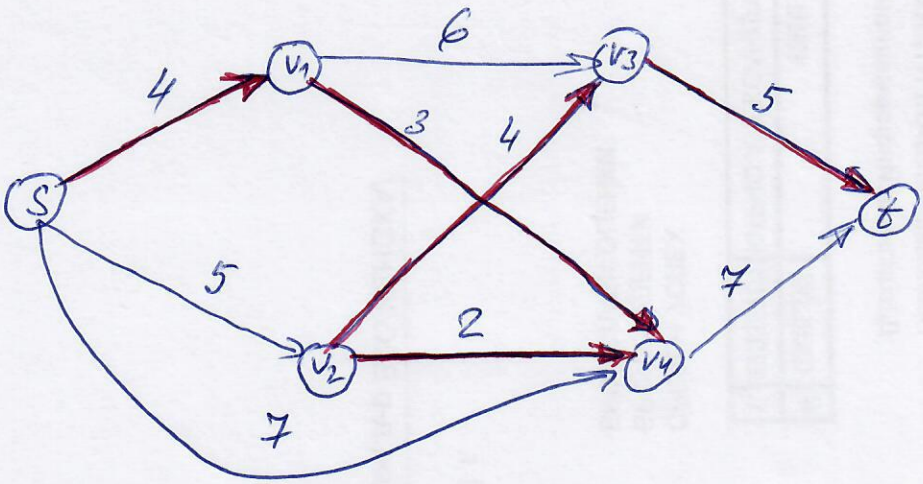
$$d(t) = \min(d(t), d(v_3) + w(v_3, t)) =$$
$$= \min(14, 9+5) = \boxed{14}$$

$v_2 v_4$

$$d(t) = \min(d(t), d(4) + w(v_4, t)) =$$
$$= \min(14, 7+7) = 14$$



МПВ по Краскалу



Резултати в табл. вид за фиг. 10.1

	d_{min}	x_{min}	y	$d(v_1)$	$d(v_2)$	$d(v_3)$	$d(v_4)$	$d(t)$		оцветен клон
0	-	s	-	∞	∞	∞	∞	∞		
1	4	v_1	s_1	4	5	∞	9	∞		(s, v_1)
2	5	v_2	v_1	4	5	10	7	∞		(s, v_2)
3	7	v_4	v_2	4	5	9	7	∞		(v_2, v_4) или (v_3, v_4)
4	9	v_3	v_4	4	5	9	7	14		(v_2, v_4)
5	14	t	v_3	4	5	9	7	14		(v_3, t) или (v_4, t)

монотонно свойство на алгоритъма на А.