

```
> restart; with(Student[VectorCalculus]) : with(Student[CalculusI]) : with(plots) :  
  infolevel[Student[CalculusI]] := 1 :
```

```
ЗАДАЧА # 17
```

```
Ответ : -124
```

```
> VF17 := VectorField((( -27 x + 11 y + 72), (-51 x - 33 y + 81)))  
      VF17 := (-27 x + 11 y + 72)ēx + (-51 x - 33 y + 81)ēy (1)
```

```
> VectorField((( -27 x + 11 y + 72), (-51 x - 33 y + 81)))  
      (-27 x + 11 y + 72)ēx + (-51 x - 33 y + 81)ēy (2)
```

```
> Countur17 := LineSegments(<-3, 5>, <-4, 5>, <-4, 1>, <-3, 5>);  
Task17 := LineInt(VF17, Countur17, 'output'=integral);  
gra17 := LineInt(VF17, Countur17, output=plot, scaling=constrained) :  
      Countur17 := LineSegments(-3ex + 5ey, -4ex + 5ey, -4ex + ey, -3ex + 5ey)  
      Task17 := ∫01 (-208 - 27 t) dt + ∫01 (-480 - 528 t) dt + ∫01 (1199 - 715 t) dt (3)
```

```
> value( Task17)  
      -124 (4)
```

```
> display(gra17)
```



$$\begin{aligned}
\int_0^1 (-208 - 27 t) dt + \int_0^1 (-480 - 528 t) dt + \int_0^1 (1199 - 715 t) dt &= \int_0^1 (-208 - 27 t) dt + \int_0^1 (-480 - 528 t) dt + \int_0^1 (1199 - 715 t) dt \\
&= \int_0^1 (-208) dt + \int_0^1 -27 t dt + \int_0^1 (-480 - 528 t) dt + \int_0^1 (1199 - 715 t) dt && \text{[sum]} \\
&= -208 + \int_0^1 -27 t dt + \int_0^1 (-480 - 528 t) dt + \int_0^1 (1199 - 715 t) dt && \text{[constant]} \\
&= -208 - 27 \left( \int_0^1 t dt \right) + \int_0^1 (-480 - 528 t) dt + \int_0^1 1199 - 715
\end{aligned}$$

(6)

