This is illustrated with the documentation example.

We first run a simple linear regression,

```
require(lme4)
l <- lm(Reaction ~ Days, sleepstudy)
s <- summary(l)
names(s)
```

```
##  [1] "call"          "terms"         "residuals"     "coefficients"
##  [5] "aliased"       "sigma"         "df"            "r.squared"
##  [9] "adj.r.squared" "fstatistic"    "cov.unscaled"
```

```
class(s)
```

```
## [1] "summary.lm"
```

```
round(sqrt(s$fstatistic[1]),3)
```

```
## value
## 8.454
```

the F statistics which is simply t^2. Next we turn to the mixed model containing a random effect

```
f <- lmer(Reaction ~ Days + (Days | Subject), sleepstudy)
s <- summary(f)
s
```

```
## Linear mixed model fit by REML ['lmerMod']
## Formula: Reaction ~ Days + (Days | Subject)
##    Data: sleepstudy
##
## REML criterion at convergence: 1743.6
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -3.9536 -0.4634  0.0231  0.4633  5.1793
##
## Random effects:
##  Groups   Name        Variance Std.Dev. Corr
##  Subject  (Intercept) 611.90   24.737
##           Days         35.08    5.923   0.07
##  Residual             654.94   25.592
## Number of obs: 180, groups:  Subject, 18
##
## Fixed effects:
##             Estimate Std. Error t value
## (Intercept)  251.405      6.824  36.843
## Days          10.467      1.546   6.771
##
## Correlation of Fixed Effects:
##      (Intr)
## Days -0.138
```

```
names(s)
```

```
##  [1] "methTitle"    "objClass"     "devcomp"      "isLmer"
##  [5] "useScale"     "logLik"       "family"       "link"
##  [9] "ngrps"        "coefficients" "sigma"        "vcov"
```

```
## [13] "varcor"       "AICtab"       "call"         "residuals"
## [17] "fitMsgs"      "optinfo"
```

```
class(with(s,coefficients))
```

```
## [1] "matrix"
```

```
t <- with(s,coefficients)[,3]
p <- 2*(1-pnorm(abs(t)))
p
```

```
## (Intercept)        Days
## 0.00000e+00 1.28122e-11
```

We can see that the P values from two models are very close, giving a sense of what they do.