Marci B Copeland BAN502 Module 3 Assignment 1

install.packages(“caret”)

library(tidyverse)

## -- Attaching packages ---------- tidyverse 1.2.1 --

## v ggplot2 3.2.1 v purrr 0.3.3  
## v tibble 2.1.3 v dplyr 0.8.3  
## v tidyr 1.0.0 v stringr 1.4.0  
## v readr 1.3.1 v forcats 0.4.0

## -- Conflicts ------------- tidyverse\_conflicts() --  
## x dplyr::filter() masks stats::filter()  
## x dplyr::lag() masks stats::lag()

library(MASS)

##   
## Attaching package: 'MASS'

## The following object is masked from 'package:dplyr':  
##   
## select

library(caret)

## Warning: package 'caret' was built under R version 3.6.2

## Loading required package: lattice

##   
## Attaching package: 'caret'

## The following object is masked from 'package:purrr':  
##   
## lift

bike<-read\_csv("hour.csv")

## Parsed with column specification:  
## cols(  
## instant = col\_double(),  
## dteday = col\_character(),  
## season = col\_double(),  
## yr = col\_double(),  
## mnth = col\_double(),  
## hr = col\_double(),  
## holiday = col\_double(),  
## weekday = col\_double(),  
## workingday = col\_double(),  
## weathersit = col\_double(),  
## temp = col\_double(),  
## atemp = col\_double(),  
## hum = col\_double(),  
## windspeed = col\_double(),  
## casual = col\_double(),  
## registered = col\_double(),  
## count = col\_double()  
## )

bike = bike %>% mutate(season = as\_factor(as.character(season))) %>%  
mutate(season = fct\_recode(season,  
"Spring" = "1",  
"Summer" = "2",  
"Fall" = "3",  
"Winter" = "4"))

bike = bike %>% mutate(yr = as\_factor(yr))  
bike = bike %>% mutate(mnth = as\_factor(mnth))  
bike = bike %>% mutate(hr = as\_factor(hr))

bike = bike %>% mutate(holiday = as\_factor(holiday)) %>%  
mutate(holiday = fct\_recode(holiday,  
"NotHoliday" = "0",  
"Holiday" = "1"))

bike = bike %>% mutate(workingday = as\_factor(workingday)) %>%  
mutate(workingday = fct\_recode(workingday,  
"Notworkingday" = "0",  
"workingday" = "1"))

bike = bike %>% mutate(weathersit = as\_factor(weathersit)) %>%  
mutate(weathersit = fct\_relevel(weathersit,  
"NoPrecip" ="1",  
"Misty" = "2",  
"LightPrecip" = "3",  
"HeavyPrecip" = "4"))

bike = bike %>% mutate(weekday = as\_factor(weekday)) %>%  
mutate(weekday = fct\_recode(weekday,  
"Sunday" = "0",  
"Monday" = "1",  
"Tuesday" = "2",  
"Wednesday" = "3",  
"Thursday" = "4",  
"Friday" = "5",  
"Saturday" = "6"))

task 1

set.seed(1234)  
train.rows=createDataPartition(y = bike$count, p=.7, list = FALSE)  
train=bike[train.rows,]  
test.rows=createDataPartition(y = bike$count, p=.3, list = FALSE)  
test=bike[test.rows,]

Task 2 The total number of rows in the train dataset is 12167 observations and 17 variables. The total number of rows in the test dataset is 5216 observations and 17 variables.

Task 3

trainmodel = lm(count ~., train)   
summary(trainmodel)

##   
## Call:  
## lm(formula = count ~ ., data = train)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -2.937e-11 -1.331e-13 2.200e-15 1.313e-13 2.157e-11   
##   
## Coefficients: (23 not defined because of singularities)  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) -1.696e-12 1.995e-13 -8.503e+00 < 2e-16 \*\*\*  
## instant 6.580e-13 5.591e-14 1.177e+01 < 2e-16 \*\*\*  
## dteday1/1/2012 -5.687e-09 4.834e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/10/2011 -1.368e-10 1.169e-11 -1.171e+01 < 2e-16 \*\*\*  
## dteday1/10/2012 -5.829e-09 4.953e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/11/2011 -1.516e-10 1.294e-11 -1.172e+01 < 2e-16 \*\*\*  
## dteday1/11/2012 -5.845e-09 4.967e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/12/2011 -1.661e-10 1.416e-11 -1.173e+01 < 2e-16 \*\*\*  
## dteday1/12/2012 -5.860e-09 4.980e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/13/2011 -1.816e-10 1.549e-11 -1.172e+01 < 2e-16 \*\*\*  
## dteday1/13/2012 -5.876e-09 4.994e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/14/2011 -1.966e-10 1.678e-11 -1.171e+01 < 2e-16 \*\*\*  
## dteday1/14/2012 -5.892e-09 5.007e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/15/2011 -2.131e-10 1.812e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday1/15/2012 -5.908e-09 5.020e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/16/2011 -2.288e-10 1.946e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday1/16/2012 -5.923e-09 5.034e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/17/2011 -2.439e-10 2.080e-11 -1.172e+01 < 2e-16 \*\*\*  
## dteday1/17/2012 -5.939e-09 5.047e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/18/2011 -2.522e-10 2.147e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday1/18/2012 -5.954e-09 5.060e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/19/2011 -2.674e-10 2.276e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday1/19/2012 -5.970e-09 5.074e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/2/2011 -1.534e-11 1.315e-12 -1.166e+01 < 2e-16 \*\*\*  
## dteday1/2/2012 -5.703e-09 4.847e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/20/2011 -2.831e-10 2.410e-11 -1.175e+01 < 2e-16 \*\*\*  
## dteday1/20/2012 -5.986e-09 5.087e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/21/2011 -2.985e-10 2.544e-11 -1.173e+01 < 2e-16 \*\*\*  
## dteday1/21/2012 -6.002e-09 5.100e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/22/2011 -3.136e-10 2.674e-11 -1.173e+01 < 2e-16 \*\*\*  
## dteday1/22/2012 -6.017e-09 5.114e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/23/2011 -3.289e-10 2.802e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday1/23/2012 -6.033e-09 5.127e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/24/2011 -3.441e-10 2.930e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday1/24/2012 -6.049e-09 5.141e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/25/2011 -3.593e-10 3.059e-11 -1.175e+01 < 2e-16 \*\*\*  
## dteday1/25/2012 -6.065e-09 5.154e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/26/2011 -3.740e-10 3.183e-11 -1.175e+01 < 2e-16 \*\*\*  
## dteday1/26/2012 -6.081e-09 5.167e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/27/2011 -3.752e-10 3.193e-11 -1.175e+01 < 2e-16 \*\*\*  
## dteday1/27/2012 -6.097e-09 5.181e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/28/2011 -3.905e-10 3.323e-11 -1.175e+01 < 2e-16 \*\*\*  
## dteday1/28/2012 -6.113e-09 5.194e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/29/2011 -4.051e-10 3.451e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday1/29/2012 -6.129e-09 5.208e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/3/2011 -2.904e-11 2.537e-12 -1.145e+01 < 2e-16 \*\*\*  
## dteday1/3/2012 -5.719e-09 4.860e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/30/2011 -4.202e-10 3.580e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday1/30/2012 -6.144e-09 5.221e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/31/2011 -4.368e-10 3.713e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/31/2012 -6.160e-09 5.235e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/4/2011 -4.446e-11 3.820e-12 -1.164e+01 < 2e-16 \*\*\*  
## dteday1/4/2012 -5.734e-09 4.873e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/5/2011 -6.003e-11 5.103e-12 -1.176e+01 < 2e-16 \*\*\*  
## dteday1/5/2012 -5.750e-09 4.887e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/6/2011 -7.435e-11 6.384e-12 -1.165e+01 < 2e-16 \*\*\*  
## dteday1/6/2012 -5.766e-09 4.900e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/7/2011 -8.935e-11 7.673e-12 -1.164e+01 < 2e-16 \*\*\*  
## dteday1/7/2012 -5.782e-09 4.914e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/8/2011 -1.053e-10 9.004e-12 -1.169e+01 < 2e-16 \*\*\*  
## dteday1/8/2012 -5.798e-09 4.927e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday1/9/2011 -1.210e-10 1.035e-11 -1.170e+01 < 2e-16 \*\*\*  
## dteday1/9/2012 -5.814e-09 4.940e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/1/2011 -4.239e-09 3.602e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/1/2012 -1.001e-08 8.505e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/10/2011 -4.381e-09 3.723e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/10/2012 -1.015e-08 8.626e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/11/2011 -4.397e-09 3.736e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/11/2012 -1.017e-08 8.639e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/12/2011 -4.412e-09 3.750e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/12/2012 -1.018e-08 8.652e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/13/2011 -4.428e-09 3.763e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/13/2012 -1.020e-08 8.666e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/14/2011 -4.444e-09 3.776e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/14/2012 -1.021e-08 8.679e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/15/2011 -4.460e-09 3.790e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/15/2012 -1.023e-08 8.693e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/16/2011 -4.476e-09 3.803e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/16/2012 -1.024e-08 8.706e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/17/2011 -4.491e-09 3.817e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/17/2012 -1.026e-08 8.720e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/18/2011 -4.507e-09 3.830e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/18/2012 -1.028e-08 8.733e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/19/2011 -4.523e-09 3.843e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/19/2012 -1.029e-08 8.746e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/2/2011 -4.254e-09 3.615e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/2/2012 -1.003e-08 8.518e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/20/2011 -4.538e-09 3.856e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/20/2012 -1.031e-08 8.760e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/21/2011 -4.554e-09 3.870e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/21/2012 -1.032e-08 8.773e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/22/2011 -4.570e-09 3.883e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/22/2012 -1.034e-08 8.787e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/23/2011 -4.586e-09 3.897e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/23/2012 -1.036e-08 8.800e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/24/2011 -4.601e-09 3.910e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/24/2012 -1.037e-08 8.814e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/25/2011 -4.617e-09 3.923e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/25/2012 -1.039e-08 8.827e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/26/2011 -4.633e-09 3.937e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/26/2012 -1.040e-08 8.840e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/27/2011 -4.648e-09 3.950e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/27/2012 -1.042e-08 8.854e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/28/2011 -4.664e-09 3.964e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/28/2012 -1.044e-08 8.867e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/29/2011 -4.681e-09 3.977e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/29/2012 -1.045e-08 8.881e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/3/2011 -4.270e-09 3.629e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/3/2012 -1.004e-08 8.532e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/30/2011 -4.696e-09 3.990e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/30/2012 -1.044e-08 8.874e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/31/2011 -4.712e-09 4.004e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/31/2012 -1.046e-08 8.887e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/4/2011 -4.285e-09 3.642e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/4/2012 -1.006e-08 8.545e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/5/2011 -4.302e-09 3.656e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/5/2012 -1.007e-08 8.559e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/6/2011 -4.317e-09 3.669e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/6/2012 -1.009e-08 8.572e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/7/2011 -4.333e-09 3.682e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/7/2012 -1.010e-08 8.585e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/8/2011 -4.350e-09 3.696e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/8/2012 -1.012e-08 8.599e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/9/2011 -4.365e-09 3.709e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday10/9/2012 -1.014e-08 8.612e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/1/2011 -4.727e-09 4.017e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/1/2012 -1.047e-08 8.901e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/10/2011 -4.869e-09 4.138e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/10/2012 -1.062e-08 9.021e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/11/2011 -4.885e-09 4.152e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/11/2012 -1.063e-08 9.034e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/12/2011 -4.901e-09 4.165e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/12/2012 -1.065e-08 9.048e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/13/2011 -4.917e-09 4.178e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/13/2012 -1.066e-08 9.061e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/14/2011 -4.933e-09 4.192e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/14/2012 -1.068e-08 9.075e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/15/2011 -4.948e-09 4.205e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/15/2012 -1.069e-08 9.088e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/16/2011 -4.965e-09 4.219e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/16/2012 -1.071e-08 9.101e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/17/2011 -4.980e-09 4.232e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/17/2012 -1.073e-08 9.115e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/18/2011 -4.996e-09 4.245e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/18/2012 -1.074e-08 9.128e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/19/2011 -5.012e-09 4.259e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/19/2012 -1.076e-08 9.142e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/2/2011 -4.743e-09 4.031e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/2/2012 -1.049e-08 8.914e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/20/2011 -5.028e-09 4.272e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/20/2012 -1.077e-08 9.155e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/21/2011 -5.043e-09 4.286e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/21/2012 -1.079e-08 9.169e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/22/2011 -5.059e-09 4.299e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/22/2012 -1.081e-08 9.182e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/23/2011 -5.075e-09 4.313e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/23/2012 -1.082e-08 9.195e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/24/2011 -5.091e-09 4.326e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/24/2012 -1.084e-08 9.209e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/25/2011 -5.107e-09 4.339e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/25/2012 -1.085e-08 9.222e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/26/2011 -5.123e-09 4.353e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/26/2012 -1.087e-08 9.236e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/27/2011 -5.138e-09 4.366e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/27/2012 -1.088e-08 9.249e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/28/2011 -5.154e-09 4.379e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/28/2012 -1.090e-08 9.263e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/29/2011 -5.169e-09 4.393e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/29/2012 -1.092e-08 9.275e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/3/2011 -4.758e-09 4.044e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/3/2012 -1.051e-08 8.928e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/30/2011 -5.184e-09 4.406e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/30/2012 -1.093e-08 9.289e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/4/2011 -4.774e-09 4.058e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/4/2012 -1.052e-08 8.941e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/5/2011 -4.791e-09 4.071e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/5/2012 -1.054e-08 8.954e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/6/2011 -4.806e-09 4.084e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/6/2012 -1.055e-08 8.968e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/7/2011 -4.822e-09 4.098e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/7/2012 -1.057e-08 8.981e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/8/2011 -4.838e-09 4.111e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/8/2012 -1.058e-08 8.994e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/9/2011 -4.853e-09 4.125e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday11/9/2012 -1.060e-08 9.008e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/1/2011 -5.200e-09 4.419e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/1/2012 -1.095e-08 9.302e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/10/2011 -5.342e-09 4.540e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/10/2012 -1.109e-08 9.423e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/11/2011 -5.358e-09 4.554e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/11/2012 -1.110e-08 9.436e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/12/2011 -5.373e-09 4.567e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/12/2012 -1.112e-08 9.450e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/13/2011 -5.390e-09 4.580e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/13/2012 -1.114e-08 9.463e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/14/2011 -5.405e-09 4.594e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/14/2012 -1.115e-08 9.477e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/15/2011 -5.421e-09 4.607e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/15/2012 -1.117e-08 9.490e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/16/2011 -5.437e-09 4.621e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/16/2012 -1.118e-08 9.503e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/17/2011 -5.452e-09 4.634e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/17/2012 -1.120e-08 9.517e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/18/2011 -5.469e-09 4.647e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/18/2012 -1.122e-08 9.530e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/19/2011 -5.485e-09 4.661e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/19/2012 -1.123e-08 9.544e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/20/2012 -1.125e-08 9.557e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/21/2011 -5.517e-09 4.688e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/21/2012 -1.126e-08 9.571e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/22/2012 -1.128e-08 9.584e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/23/2012 -1.129e-08 9.597e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/24/2012 -1.131e-08 9.610e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/25/2012 -1.133e-08 9.623e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/27/2012 -1.136e-08 9.650e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/28/2011 -5.625e-09 4.780e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/28/2012 -1.137e-08 9.663e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/29/2012 -1.139e-08 9.677e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/3/2011 -5.232e-09 4.446e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/3/2012 -1.098e-08 9.329e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/30/2011 -5.657e-09 4.807e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/30/2012 -1.140e-08 9.690e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/31/2012 -1.142e-08 9.704e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday12/4/2012 -1.099e-08 9.342e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/5/2011 -5.263e-09 4.473e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/5/2012 -1.101e-08 9.356e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/6/2011 -5.280e-09 4.486e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/6/2012 -1.103e-08 9.369e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/7/2011 -5.294e-09 4.500e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/7/2012 -1.104e-08 9.383e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/8/2011 -5.311e-09 4.513e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/8/2012 -1.106e-08 9.396e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/9/2011 -5.328e-09 4.527e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday12/9/2012 -1.107e-08 9.410e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/1/2011 -4.510e-10 3.842e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday2/1/2012 -6.176e-09 5.248e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/10/2011 -5.909e-10 5.027e-11 -1.175e+01 < 2e-16 \*\*\*  
## dteday2/10/2012 -6.317e-09 5.368e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/11/2011 -6.056e-10 5.151e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/11/2012 -6.333e-09 5.382e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/12/2011 -6.217e-10 5.284e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/12/2012 -6.349e-09 5.395e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/13/2011 -6.365e-10 5.413e-11 -1.176e+01 < 2e-16 \*\*\*  
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## dteday2/15/2011 -6.676e-10 5.676e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/15/2012 -6.396e-09 5.435e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/16/2011 -6.823e-10 5.804e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/16/2012 -6.411e-09 5.449e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday2/17/2012 -6.427e-09 5.462e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/18/2011 -7.145e-10 6.072e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/18/2012 -6.444e-09 5.476e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/19/2011 -7.301e-10 6.206e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/19/2012 -6.459e-09 5.489e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/2/2011 -4.668e-10 3.975e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday2/2/2012 -6.191e-09 5.261e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/20/2011 -7.453e-10 6.336e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/20/2012 -6.474e-09 5.502e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/21/2011 -7.602e-10 6.469e-11 -1.175e+01 < 2e-16 \*\*\*  
## dteday2/21/2012 -6.490e-09 5.515e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/22/2011 -7.724e-10 6.570e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/22/2012 -6.505e-09 5.528e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday2/23/2012 -6.521e-09 5.542e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/24/2011 -8.031e-10 6.828e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/24/2012 -6.537e-09 5.555e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/25/2011 -8.185e-10 6.957e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/25/2012 -6.552e-09 5.568e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/26/2011 -8.335e-10 7.090e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/26/2012 -6.568e-09 5.582e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/27/2011 -8.495e-10 7.220e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/27/2012 -6.585e-09 5.595e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/28/2011 -8.635e-10 7.343e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/28/2012 -6.600e-09 5.609e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/29/2012 -6.616e-09 5.622e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/3/2011 -4.824e-10 4.105e-11 -1.175e+01 < 2e-16 \*\*\*  
## dteday2/3/2012 -6.207e-09 5.275e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/4/2011 -4.978e-10 4.233e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/4/2012 -6.223e-09 5.288e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/5/2011 -5.121e-10 4.367e-11 -1.173e+01 < 2e-16 \*\*\*  
## dteday2/5/2012 -6.238e-09 5.302e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/6/2011 -5.293e-10 4.501e-11 -1.176e+01 < 2e-16 \*\*\*  
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## dteday2/7/2011 -5.443e-10 4.635e-11 -1.174e+01 < 2e-16 \*\*\*  
## dteday2/7/2012 -6.270e-09 5.328e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/8/2011 -5.608e-10 4.769e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/8/2012 -6.286e-09 5.341e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday2/9/2011 -5.758e-10 4.898e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday2/9/2012 -6.301e-09 5.355e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/10/2012 -6.774e-09 5.756e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/11/2011 -1.034e-09 8.790e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday3/11/2012 -6.789e-09 5.769e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/12/2012 -6.805e-09 5.782e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/13/2012 -6.820e-09 5.795e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/14/2011 -1.080e-09 9.182e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/14/2012 -6.836e-09 5.809e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/15/2012 -6.851e-09 5.822e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/16/2011 -1.111e-09 9.439e-11 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/18/2011 -1.142e-09 9.702e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/18/2012 -6.899e-09 5.862e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/19/2011 -1.158e-09 9.835e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/19/2012 -6.915e-09 5.876e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/21/2012 -6.946e-09 5.903e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/23/2012 -6.978e-09 5.930e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/24/2012 -6.994e-09 5.943e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/25/2012 -7.010e-09 5.956e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/26/2012 -7.025e-09 5.970e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/27/2012 -7.041e-09 5.983e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/28/2012 -7.057e-09 5.997e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/3/2011 -9.112e-10 7.744e-11 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/3/2012 -6.663e-09 5.662e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/30/2011 -1.328e-09 1.129e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/30/2012 -7.088e-09 6.023e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/4/2012 -6.679e-09 5.675e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday3/5/2011 -9.424e-10 8.012e-11 -1.176e+01 < 2e-16 \*\*\*  
## dteday3/5/2012 -6.695e-09 5.689e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/6/2012 -6.709e-09 5.702e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday3/8/2011 -9.895e-10 8.404e-11 -1.178e+01 < 2e-16 \*\*\*  
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## dteday4/10/2012 -7.261e-09 6.171e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday4/14/2011 -1.564e-09 1.330e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/14/2012 -7.325e-09 6.224e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/15/2011 -1.580e-09 1.343e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/15/2012 -7.340e-09 6.237e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/16/2011 -1.595e-09 1.356e-10 -1.176e+01 < 2e-16 \*\*\*  
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## dteday4/17/2011 -1.612e-09 1.370e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/17/2012 -7.371e-09 6.264e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/18/2011 -1.628e-09 1.383e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/18/2012 -7.387e-09 6.277e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday4/19/2012 -7.403e-09 6.291e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/2/2011 -1.376e-09 1.169e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/2/2012 -7.135e-09 6.063e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/20/2011 -1.659e-09 1.410e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/20/2012 -7.419e-09 6.304e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/21/2011 -1.675e-09 1.424e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/21/2012 -7.435e-09 6.318e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/22/2011 -1.691e-09 1.437e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/22/2012 -7.451e-09 6.331e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/23/2011 -1.706e-09 1.450e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/23/2012 -7.466e-09 6.344e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/24/2011 -1.722e-09 1.464e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/24/2012 -7.482e-09 6.358e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday4/25/2012 -7.497e-09 6.371e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/26/2011 -1.754e-09 1.491e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/26/2012 -7.513e-09 6.385e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday4/27/2012 -7.529e-09 6.398e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/28/2011 -1.786e-09 1.517e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/28/2012 -7.545e-09 6.412e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/29/2011 -1.801e-09 1.531e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/29/2012 -7.561e-09 6.425e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/3/2011 -1.392e-09 1.183e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday4/3/2012 -7.151e-09 6.077e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday4/30/2012 -7.577e-09 6.438e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday4/4/2012 -7.167e-09 6.090e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday4/7/2012 -7.215e-09 6.130e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/10/2012 -7.735e-09 6.573e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/11/2012 -7.750e-09 6.586e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/12/2012 -7.767e-09 6.599e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/14/2012 -7.798e-09 6.626e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/15/2012 -7.814e-09 6.640e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/16/2011 -2.070e-09 1.759e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/16/2012 -7.829e-09 6.653e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/17/2011 -2.086e-09 1.772e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/17/2012 -7.845e-09 6.666e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/18/2011 -2.101e-09 1.786e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/18/2012 -7.861e-09 6.680e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/19/2011 -2.117e-09 1.799e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/19/2012 -7.877e-09 6.693e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/2/2012 -7.608e-09 6.465e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/20/2012 -7.893e-09 6.707e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/21/2011 -2.149e-09 1.826e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/21/2012 -7.910e-09 6.720e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/22/2011 -2.165e-09 1.840e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/22/2012 -7.924e-09 6.734e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/23/2011 -2.180e-09 1.853e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/23/2012 -7.940e-09 6.747e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/24/2012 -7.956e-09 6.760e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/25/2012 -7.972e-09 6.774e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/26/2011 -2.228e-09 1.893e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/26/2012 -7.988e-09 6.787e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/27/2011 -2.243e-09 1.907e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/27/2012 -8.004e-09 6.801e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/28/2011 -2.260e-09 1.920e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/28/2012 -8.019e-09 6.814e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/29/2011 -2.276e-09 1.933e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/29/2012 -8.035e-09 6.828e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/3/2011 -1.864e-09 1.585e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/3/2012 -7.624e-09 6.479e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/30/2011 -2.291e-09 1.947e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/30/2012 -8.050e-09 6.841e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/31/2011 -2.307e-09 1.960e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/31/2012 -8.066e-09 6.854e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/4/2011 -1.880e-09 1.598e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday5/5/2012 -7.656e-09 6.505e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/6/2011 -1.912e-09 1.625e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/6/2012 -7.672e-09 6.519e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/7/2011 -1.928e-09 1.638e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/7/2012 -7.687e-09 6.532e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/8/2011 -1.944e-09 1.652e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/8/2012 -7.703e-09 6.546e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday5/9/2011 -1.959e-09 1.665e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday6/1/2011 -2.323e-09 1.974e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday6/13/2011 -2.513e-09 2.135e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday6/14/2011 -2.528e-09 2.148e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday6/14/2012 -8.287e-09 7.042e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday6/15/2011 -2.544e-09 2.162e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday6/18/2012 -8.351e-09 7.096e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday7/27/2012 -8.967e-09 7.619e-10 -1.177e+01 < 2e-16 \*\*\*  
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## dteday7/5/2011 -2.860e-09 2.430e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/5/2012 -8.620e-09 7.324e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/6/2011 -2.875e-09 2.443e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/6/2012 -8.635e-09 7.337e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/7/2011 -2.891e-09 2.457e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/7/2012 -8.653e-09 7.351e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/8/2011 -2.907e-09 2.470e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/8/2012 -8.667e-09 7.364e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/9/2011 -2.923e-09 2.484e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday7/9/2012 -8.682e-09 7.378e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/1/2011 -3.286e-09 2.792e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/1/2012 -9.045e-09 7.686e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/10/2011 -3.428e-09 2.913e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/10/2012 -9.188e-09 7.807e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/11/2011 -3.444e-09 2.926e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/11/2012 -9.204e-09 7.821e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/12/2011 -3.460e-09 2.940e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/12/2012 -9.220e-09 7.834e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/13/2011 -3.476e-09 2.953e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/13/2012 -9.235e-09 7.847e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/14/2011 -3.491e-09 2.967e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/14/2012 -9.251e-09 7.861e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/15/2011 -3.507e-09 2.980e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/15/2012 -9.266e-09 7.874e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/16/2011 -3.523e-09 2.994e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/16/2012 -9.282e-09 7.888e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/17/2011 -3.539e-09 3.007e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/17/2012 -9.298e-09 7.901e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/18/2011 -3.555e-09 3.020e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/18/2012 -9.315e-09 7.914e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/19/2011 -3.570e-09 3.034e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/19/2012 -9.330e-09 7.928e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/2/2011 -3.302e-09 2.806e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/2/2012 -9.061e-09 7.700e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/20/2011 -3.586e-09 3.047e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/20/2012 -9.345e-09 7.941e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/21/2011 -3.602e-09 3.061e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/21/2012 -9.361e-09 7.955e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/22/2011 -3.617e-09 3.074e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/22/2012 -9.377e-09 7.968e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/23/2011 -3.633e-09 3.087e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/23/2012 -9.393e-09 7.982e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/24/2011 -3.649e-09 3.101e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/24/2012 -9.409e-09 7.995e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/25/2011 -3.664e-09 3.114e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/25/2012 -9.425e-09 8.008e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/26/2011 -3.681e-09 3.128e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/26/2012 -9.441e-09 8.022e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/27/2011 -3.697e-09 3.141e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/27/2012 -9.456e-09 8.035e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/28/2011 -3.704e-09 3.147e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/28/2012 -9.472e-09 8.049e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/29/2011 -3.719e-09 3.161e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/29/2012 -9.488e-09 8.062e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/3/2011 -3.318e-09 2.819e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/3/2012 -9.078e-09 7.713e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/30/2011 -3.735e-09 3.174e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/30/2012 -9.503e-09 8.075e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/31/2011 -3.751e-09 3.188e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/31/2012 -9.519e-09 8.089e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/4/2011 -3.333e-09 2.833e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/4/2012 -9.093e-09 7.727e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/5/2011 -3.349e-09 2.846e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/5/2012 -9.110e-09 7.740e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/6/2011 -3.365e-09 2.859e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/6/2012 -9.125e-09 7.753e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/7/2011 -3.381e-09 2.873e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/7/2012 -9.140e-09 7.767e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/8/2011 -3.397e-09 2.886e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/8/2012 -9.156e-09 7.780e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/9/2011 -3.412e-09 2.900e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday8/9/2012 -9.172e-09 7.794e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/1/2011 -3.767e-09 3.201e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/1/2012 -9.536e-09 8.102e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/10/2011 -3.908e-09 3.321e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/10/2012 -9.677e-09 8.223e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/11/2011 -3.924e-09 3.334e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/11/2012 -9.693e-09 8.237e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/12/2011 -3.939e-09 3.347e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/12/2012 -9.709e-09 8.250e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/13/2011 -3.954e-09 3.360e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/13/2012 -9.724e-09 8.263e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/14/2011 -3.970e-09 3.374e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/14/2012 -9.740e-09 8.277e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/15/2011 -3.986e-09 3.387e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/15/2012 -9.757e-09 8.290e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/16/2011 -4.002e-09 3.401e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/16/2012 -9.772e-09 8.304e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/17/2011 -4.018e-09 3.414e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/17/2012 -9.788e-09 8.317e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/18/2011 -4.034e-09 3.427e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/18/2012 -9.804e-09 8.330e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/19/2011 -4.049e-09 3.441e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/19/2012 -9.819e-09 8.344e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/2/2011 -3.783e-09 3.214e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/2/2012 -9.552e-09 8.116e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/20/2011 -4.065e-09 3.454e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/20/2012 -9.835e-09 8.357e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/21/2011 -4.081e-09 3.468e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/21/2012 -9.851e-09 8.371e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/22/2011 -4.096e-09 3.481e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/22/2012 -9.867e-09 8.384e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/23/2011 -4.112e-09 3.495e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/23/2012 -9.883e-09 8.398e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/24/2011 -4.128e-09 3.508e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/24/2012 -9.898e-09 8.411e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/25/2011 -4.144e-09 3.521e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/25/2012 -9.914e-09 8.424e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/26/2011 -4.160e-09 3.535e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/26/2012 -9.929e-09 8.438e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/27/2011 -4.176e-09 3.548e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/27/2012 -9.945e-09 8.451e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/28/2011 -4.191e-09 3.562e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/28/2012 -9.961e-09 8.465e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/29/2011 -4.207e-09 3.575e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/29/2012 -9.977e-09 8.478e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/3/2011 -3.799e-09 3.228e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/3/2012 -9.567e-09 8.129e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/30/2011 -4.223e-09 3.588e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/30/2012 -9.993e-09 8.491e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/4/2011 -3.815e-09 3.241e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/4/2012 -9.582e-09 8.143e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/5/2011 -3.830e-09 3.255e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/5/2012 -9.598e-09 8.156e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/6/2011 -3.845e-09 3.268e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/6/2012 -9.614e-09 8.169e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/7/2011 -3.861e-09 3.281e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/7/2012 -9.630e-09 8.183e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/8/2011 -3.876e-09 3.294e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/8/2012 -9.646e-09 8.196e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/9/2011 -3.892e-09 3.307e-10 -1.177e+01 < 2e-16 \*\*\*  
## dteday9/9/2012 -9.662e-09 8.210e-10 -1.177e+01 < 2e-16 \*\*\*  
## seasonSummer NA NA NA NA   
## seasonFall NA NA NA NA   
## seasonWinter NA NA NA NA   
## yr1 NA NA NA NA   
## mnth2 NA NA NA NA   
## mnth3 NA NA NA NA   
## mnth4 NA NA NA NA   
## mnth5 NA NA NA NA   
## mnth6 NA NA NA NA   
## mnth7 NA NA NA NA   
## mnth8 NA NA NA NA   
## mnth9 NA NA NA NA   
## mnth10 NA NA NA NA   
## mnth11 NA NA NA NA   
## mnth12 NA NA NA NA   
## hr1 -9.838e-13 7.042e-14 -1.397e+01 < 2e-16 \*\*\*  
## hr2 -8.686e-13 1.195e-13 -7.265e+00 3.96e-13 \*\*\*  
## hr3 -2.289e-12 1.709e-13 -1.339e+01 < 2e-16 \*\*\*  
## hr4 -2.919e-12 2.236e-13 -1.305e+01 < 2e-16 \*\*\*  
## hr5 -3.504e-12 2.776e-13 -1.262e+01 < 2e-16 \*\*\*  
## hr6 -3.387e-12 3.326e-13 -1.018e+01 < 2e-16 \*\*\*  
## hr7 -3.869e-12 3.874e-13 -9.988e+00 < 2e-16 \*\*\*  
## hr8 -4.203e-12 4.425e-13 -9.499e+00 < 2e-16 \*\*\*  
## hr9 -5.394e-12 4.984e-13 -1.082e+01 < 2e-16 \*\*\*  
## hr10 -6.353e-12 5.541e-13 -1.146e+01 < 2e-16 \*\*\*  
## hr11 -7.164e-12 6.097e-13 -1.175e+01 < 2e-16 \*\*\*  
## hr12 -7.675e-12 6.652e-13 -1.154e+01 < 2e-16 \*\*\*  
## hr13 -8.349e-12 7.212e-13 -1.158e+01 < 2e-16 \*\*\*  
## hr14 -9.073e-12 7.771e-13 -1.168e+01 < 2e-16 \*\*\*  
## hr15 -9.611e-12 8.327e-13 -1.154e+01 < 2e-16 \*\*\*  
## hr16 -1.021e-11 8.883e-13 -1.149e+01 < 2e-16 \*\*\*  
## hr17 -1.105e-11 9.434e-13 -1.172e+01 < 2e-16 \*\*\*  
## hr18 -1.019e-11 9.995e-13 -1.019e+01 < 2e-16 \*\*\*  
## hr19 -1.219e-11 1.056e-12 -1.154e+01 < 2e-16 \*\*\*  
## hr20 -1.216e-11 1.112e-12 -1.093e+01 < 2e-16 \*\*\*  
## hr21 -1.343e-11 1.169e-12 -1.149e+01 < 2e-16 \*\*\*  
## hr22 -1.387e-11 1.225e-12 -1.132e+01 < 2e-16 \*\*\*  
## hr23 -1.434e-11 1.281e-12 -1.120e+01 < 2e-16 \*\*\*  
## holidayHoliday NA NA NA NA   
## weekdayMonday NA NA NA NA   
## weekdayTuesday NA NA NA NA   
## weekdayWednesday NA NA NA NA   
## weekdayThursday NA NA NA NA   
## weekdayFriday NA NA NA NA   
## weekdaySaturday NA NA NA NA   
## workingdayworkingday NA NA NA NA   
## weathersit2 2.151e-14 1.891e-14 1.137e+00 0.2555   
## weathersit3 -5.760e-15 3.140e-14 -1.830e-01 0.8545   
## weathersit4 -3.372e-13 4.131e-13 -8.160e-01 0.4143   
## temp 3.096e-13 4.076e-13 7.600e-01 0.4476   
## atemp 1.010e-12 3.964e-13 2.549e+00 0.0108 \*   
## hum 3.212e-14 7.946e-14 4.040e-01 0.6861   
## windspeed 1.576e-13 7.429e-14 2.121e+00 0.0339 \*   
## casual 1.000e+00 2.483e-16 4.028e+15 < 2e-16 \*\*\*  
## registered 1.000e+00 8.419e-17 1.188e+16 < 2e-16 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 6.898e-13 on 11403 degrees of freedom  
## Multiple R-squared: 1, Adjusted R-squared: 1   
## F-statistic: 1.104e+30 on 763 and 11403 DF, p-value: < 2.2e-16

Adjusted R-square value equals 1.

Task 4

predict\_train=predict(trainmodel, newdata=train)

## Warning in predict.lm(trainmodel, newdata = train): prediction from a rank-  
## deficient fit may be misleading

head(predict\_train)

## 1 2 3 4 5 6   
## 40 32 13 1 1 2

Task 5

predict\_test=predict(trainmodel, newdata=test)

## Warning in predict.lm(trainmodel, newdata = test): prediction from a rank-  
## deficient fit may be misleading

head(predict\_test)

## 1 2 3 4 5 6   
## 2 94 36 34 28 17

Task 6 R square value manually calculated would be 1 which was the same as the training dataset.