HW 4

1) Positive.

2) See attached regression results.

3) t_c with $33 > df$ at $\alpha = 0.05$ is 1.96

All variables except "recroom" are significant at 5% level.

4) β_2 : 1% ↑ lotsize ⇒ 0.37% ↑ price

β_3 : 1 more bedroom ⇒ 3.36% ↑ price

β_4 : 1 more bathroom ⇒ 17.64% ↑ price

β_5 : 5.26% price higher w/ recroom

β_6 : 11.16% higher w/ full basement

β_7 : 15.86% higher w/ A/C

β_8 : 13.89% higher if in preferred area

β_9 : 1 more story ⇒ 9.68% higher price

5) Reasonable estimates and significant variables; R^2 is high, model performs well.

Could come up with other variables / interaction terms.

```
. use data/housing

. gen lprice = log(price)

. gen llotsize = log(lotsize)

. regress lprice llotsize bedrooms bathrms recroom fullbase airco prefarea stories
```

Source	SS	df	MS	Number of obs =	546
Model	49.2700678	8	6.15875848	F(8, 537) =	126.51
Residual	26.1431024	537	.048683617	Prob > F =	0.0000
				R-squared =	0.6533
Total	75.4131702	545	.138372789	Adj R-squared =	0.6482
				Root MSE =	.22064

lprice	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
llotsize	.3688067	.0257157	14.34	0.000	.318291	.4193224
bedrooms	.0336246	.0148243	2.27	0.024	.0045038	.0627454
bathrms	.1764315	.021164	8.34	0.000	.1348571	.2180059
recroom	.052585	.0272766	1.93	0.054	-.000997	.106167
fullbase	.1116416	.0227235	4.91	0.000	.0670037	.1562795
airco	.1586249	.0220707	7.19	0.000	.1152693	.2019805
prefarea	.1389202	.0235388	5.90	0.000	.0926807	.1851597
stories	.0968393	.0130565	7.42	0.000	.0711913	.1224873
_cons	7.303587	.2138694	34.15	0.000	6.883463	7.72371