

1.3 Linear Fcts

1.3
1/2

Ex1: Marriage rates are declining (approx data)

This is approx data -
taken from the Index
of Leading Cultural
Indicators.

yr	# of marriages 1000 unmarried women
1975	66.4
1980	62.5
1985	58.6
1990	54.7

construct a linear model.

- define variables.
- model.
- int. y-int.
- int. the slope.
- find & int. the x-int.
- reasonable domain & range.

Linear Fct: Of the form $f(x) = mx + b$ where
 m & b are constants.

ex2: Find the lin. fct. w/ slope = $-\frac{2}{3}$ & y-int -1.

ex3: Eqn of the line thru $(10, 2)$ & $(8, 7)$

parallel vs. perp. lines.

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slope = 0 vs. und. slope.

ex4: R-11 is $3\frac{1}{2}$ " thick

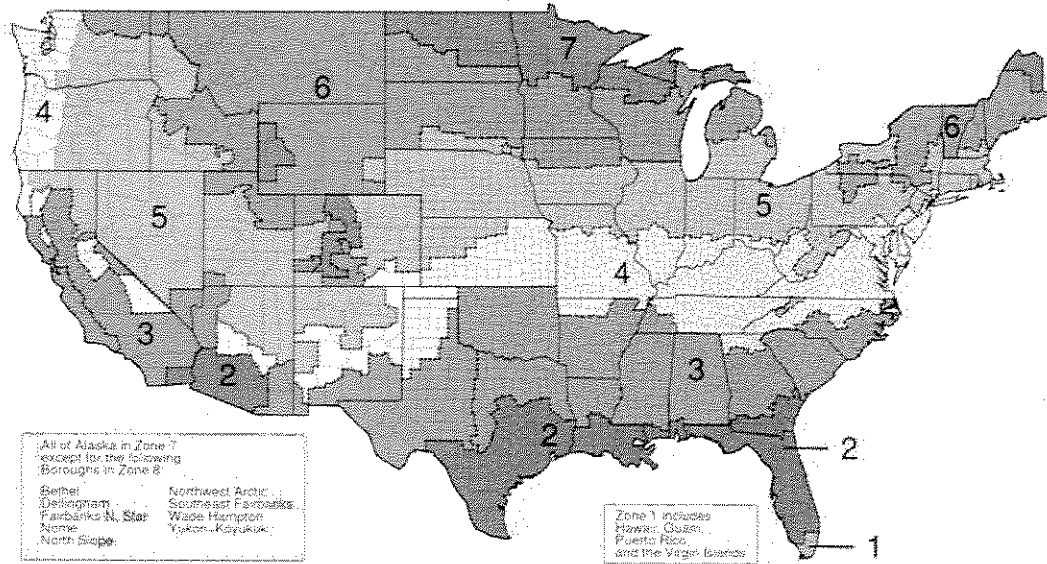
R-19 is $5\frac{1}{2}$ " thick

How thick is R-51 if the relationship is linear?

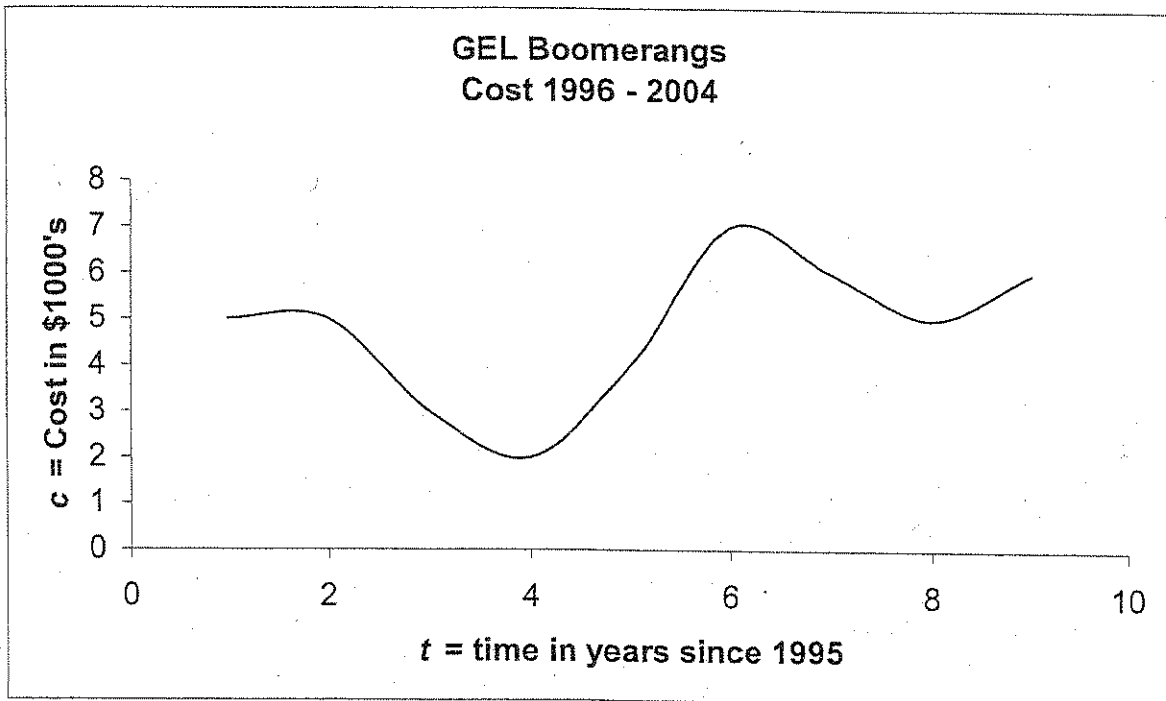
(see picture)



Recommended insulation levels for retrofitting existing wood-framed buildings



Zone	Add Insulation to Attic		Floor
	Uninsulated Attic	Existing 3-4 Inches of Insulation	
1	R30 to R49	R25 to R30	R13
2	R30 to R60	R25 to R38	R13 to R19
3	R30 to R60	R25 to R38	R19 to R25
4	R38 to R60	R38	R25 to R30
5 to 8	R49 to R60	R38 to R49	R25 to R30



Instructions: Answer each question using a complete sentence.

- 1.) What does $t=4$ represent? _____
- 2.) What does $c=5$ represent? _____
- 3.) What is the domain of $c(t)$? _____
- 4.) What is the range of $c(t)$? _____
- 5.) Find and interpret $c(2)$ _____
- 6.) Find and interpret $c(7)$ _____
- 7.) Solve and interpret $p(t) = 7$ _____
- 8.) Solve and interpret $p(t) = 6$ _____
- 9.) Is it better to have higher costs or lower costs? _____
- 10.) Explain the similarities and difference on the graph between $t=2$ and $t=6$. _____
- 11.) Find and interpret $c(6) - c(4)$ _____