

■ Example 9.2

```
Off[General::spell];
Off[General::spell1];
thinn = AbsoluteThickness[.5];
medum = AbsoluteThickness[1.];
thick = AbsoluteThickness[1.5];
$TextStyle = {FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize -> 9};
SetOptions[Plot, PlotPoints -> 40, ImageSize -> 384];
SetOptions[Plot, FrameStyle -> medum, AxesStyle -> medum, PlotStyle -> medum];
Black = GrayLevel[0];
BGray = GrayLevel[0.3];
WGray = GrayLevel[0.6];
```

■ Stat Example (& Figure 9.4)

```
inc =. ;
c25 =. ;

dataWhead = Import["comm30.txt", "table"];

TableForm[dataWhead];

labels = Take[dataWhead, 1]
{{AP, PO, CH, INC, SP, C25, Q}}
```

data = Drop[dataWhead, 1];

$\hat{W}_d = \text{Fit}[\text{data}, \{1, \text{ap}, \text{inc}, \text{c25}\}, \{\text{ap}, \text{po}, \text{ch}, \text{inc}, \text{sp}, \text{c25}\}]$

32.8149 - 26.6394 ap + 0.0725354 c25 + 9.59015 inc

<< **Statistics`LinearRegression`**

Regress[data, {1, ap, inc, c25}, {ap, po, ch, inc, sp, c25}]

		Estimate	SE	TStat	PValue
	1	32.8149	9.90232	3.31386	0.000952311
{ParameterTable ->	ap	-26.6394	1.86716	-14.2673	2.87739×10^{-42} ,
	inc	9.59015	1.13478	8.45107	0.
	c25	0.0725354	0.00301598	24.0503	0.

RSquared -> 0.463591, AdjustedRSquared -> 0.462024, EstimatedVariance -> 1657.5,

		DF	SumOfSq	MeanSq	FRatio	PValue
ANOVA Table ->	Model	3	1.47117×10^6	490390.	295.861	0.
	Error	1027	1.70225×10^6	1657.5		
	Total	1030	3.17342×10^6			

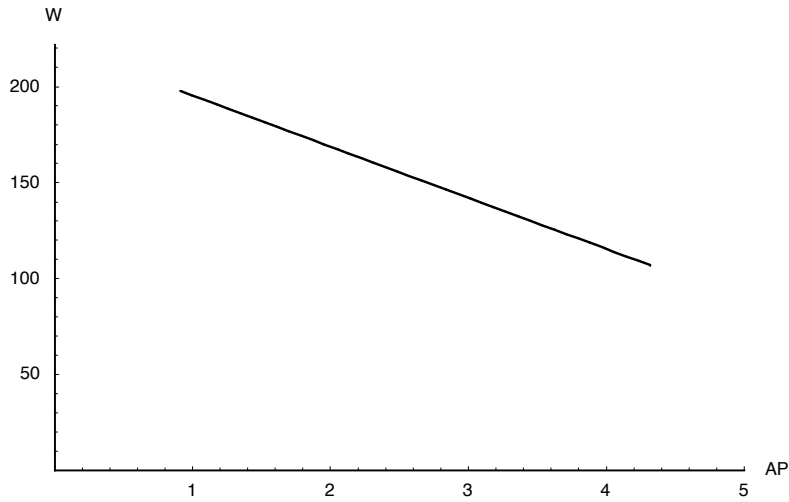
averagec25 = 1811.375;
averageInc = 6.03658099;

```
c25 = averagec25;  
inc = averageInc;
```

\hat{W}_d

222.095 - 26.6394 ap

```
Plot[ $\hat{W}_d$ , {ap, 0.91, 4.32},  
  AxesLabel -> {"AP", "W"},  
  AxesOrigin -> {0, 0},  
  PlotRange -> {{0, 5}, {0, 222}}]
```



- Graphics -

$\hat{W}_d / . \text{ap} \rightarrow 0.91$

197.854

$\hat{W}_d / . \text{ap} \rightarrow 4.32$

107.013

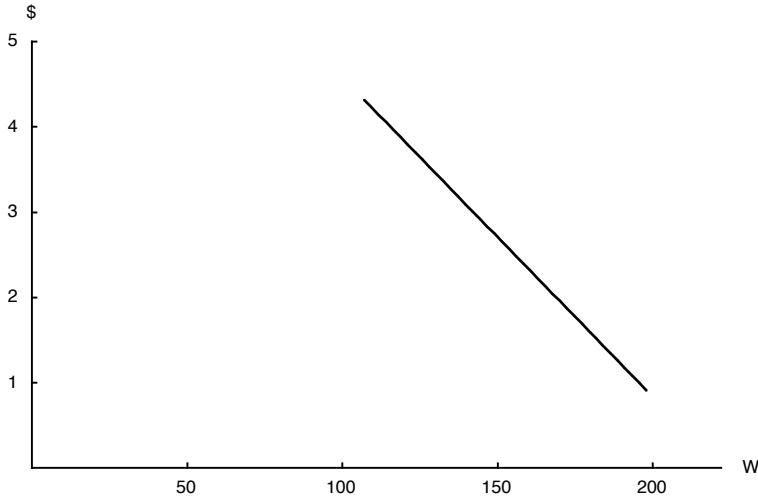
p = ap /. Solve[$\hat{W}_d == w$, ap]

{-0.0375384 (-222.095 + 1. w) }

```

p194a = Plot[p, {w, 107.013, 197.854},
  AxesLabel -> {"W", "$"},
  Ticks ->
    {{{50, 50, {0.00625, 0.}}, {Black, medum}}, {100, 100, {0.00625, 0.}}, {Black, medum}},
    {{150, 150, {0.00625, 0.}}, {Black, medum}}, {200, 200, {0.00625, 0.}}, {Black, medum}}},
    {{1, 1, {0.00625, 0.}}, {Black, medum}}, {2, 2, {0.00625, 0.}}, {Black, medum}},
    {3, 3, {0.00625, 0.}}, {Black, medum}}, {4, 4, {0.00625, 0.}}, {Black, medum}},
    {5, 5, {0.00625, 0.}}, {Black, medum}}}},
  AxesOrigin -> {0, 0},
  PlotRange -> {{0, 222}, {0, 5.0}}]

```

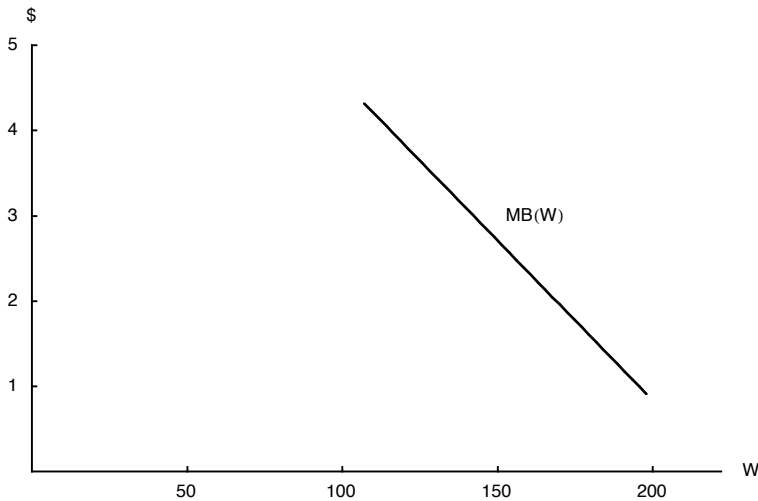


- Graphics -

```

p194 = Show[p194a,
  Graphics[Text["MB(W)", {162., 3.}]],
  DisplayFunction -> $DisplayFunction
]

```



- Graphics -