

Buy all machines for which the

$MRP_K > \text{price of capital } (P_K)$

6	692	980	1200	1384	1550	1692
5	632	896	1096	1264	1410	1550
4	564	800	960	1128	1264	1384
3	490	692	846	980	1096	1200
2	400	564	692	800	896	980
1	282	400	490	564	632	692
	1	2	3	4	5	6



Capital
priti

Labor (L)

K

Total
Product



632

2

89%

3

109%

4

1264

5

1410

6

1550

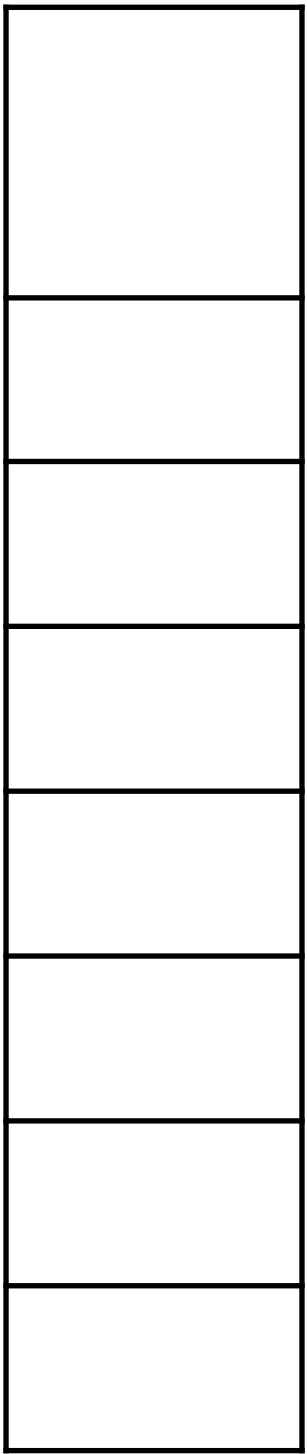
0

0



Fix Labor at 5

If we use 5 workers



264

200

168

146

140

MP_k

632

Marginal Product K

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632 - 0

896 - 632

100% - 89%

1264 - 109%

1410 - 1264

1550 - 1410

MP_K

632

264

200

168

146

140

How many machines should be purchased?



MRP_k

A



S

U

mm

























U





U









5



U





6



























6







6





P















3





Buy all machines for which the

$$\text{MRP}_k > \$1,300$$



M

R

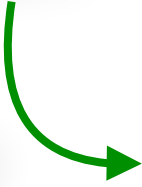
P

K

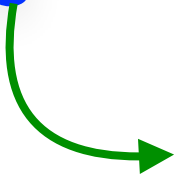
2 machines
should be
purchased if
 $P_k = \$1,300$

These are all output
levels that can be
produced with 5
workers

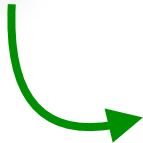
Output with
5 workers
1 machine



Output with
5 workers
2 machines



Output with
5 workers
3 machines



Assume the price of Output is \$5/unit

and the price of Capital (P_K) is \$1,300





632 x 5

632×5

264 x 5

$$632 \times 5$$

$$264 \times 5$$

200 x 5

$$632 \times 5$$

$$264 \times 5$$

$$200 \times 5$$

168 x 5

$$632 \times 5$$

$$264 \times 5$$

$$200 \times 5$$

$$168 \times 5$$

146 x 5

$$632 \times 5$$

$$264 \times 5$$

$$200 \times 5$$

$$168 \times 5$$

$$146 \times 5$$

140 x 5

$$632 \times 5$$

$$264 \times 5$$

$$200 \times 5$$

$$168 \times 5$$

$$146 \times 5$$

$$140 \times 5$$

MRP_k





3160

3160

1320

3160
1320

1000

3160
1320
1000

840

3160
1320
1000
840

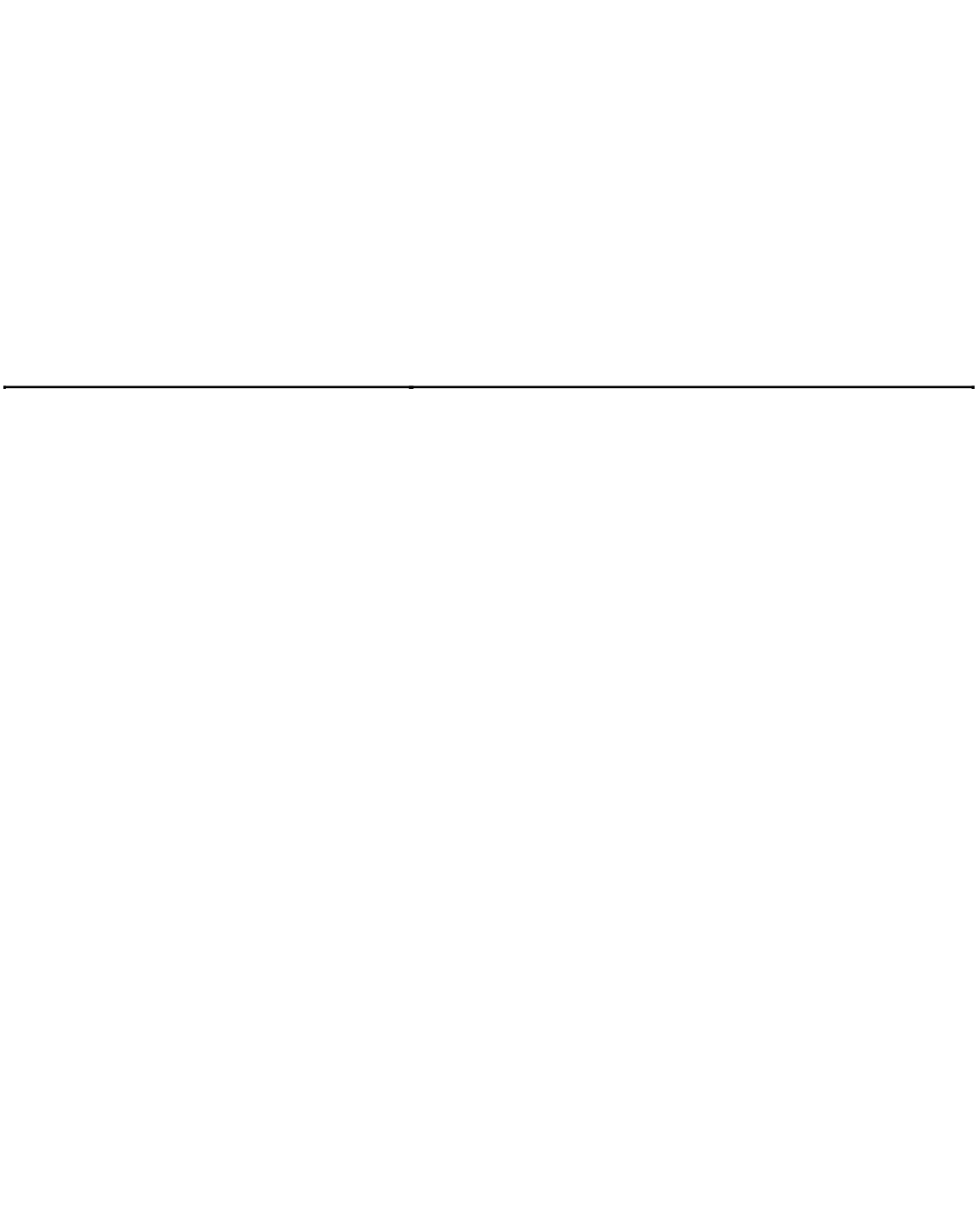
730

3160
1320
1000
840
730

700

3160
1320
1000
840
730
700





$> 1,300$

Buy machine 1

$> 1,300$

Buy machine 1

$> 1,300$

Buy machine 2

> 1,300

Buy machine 1

> 1,300

Buy machine 2

< 1,300

Do not buy machine 3

$>1,300$

Buy machine 1

$>1,300$

Buy machine 2

$<1,300$

Do not buy machine 3

< 1,300

Do not buy machine 4

$>1,300$

Buy machine 1

$>1,300$

Buy machine 2

$<1,300$

Do not buy machine 3

$<1,300$

Do not buy machine 4

< 1,300

Do not buy machine 5

$>1,300$

Buy machine 1

$>1,300$

Buy machine 2

$<1,300$

Do not buy machine 3

$<1,300$

Do not buy machine 4

$<1,300$

Do not buy machine 5

< 1,300

Do not buy machine 6

>1,300

Buy machine 1

>1,300

Buy machine 2

<1,300

Do not buy machine 3

<1,300

Do not buy machine 4

<1,300

Do not buy machine 5

<1,300

Do not buy machine 6

If we use 5 workers



Fix Labor at 5

2 machines
should be
purchased if
 $P_K = \$1,300$

Capital (K)

6		1550
5		1410
4		1264
3		1096
2		896
1		632
		5

Labor (L)

K	MP _K	MRP _K	MRP _K	MRP _K	Decision
0					
1			3160	>1,300	Buy machine 1
2	264	264 x 5	1320	>1,300	Buy machine 2
3	200	200 x 5	1000	<1,300	Do not buy machine 3
4	168	168 x 5	840	<1,300	Do not buy machine 4
5	146	146 x 5	730	<1,300	Do not buy machine 5
6	140	140 x 5	700	<1,300	Do not buy machine 6

Assume the price of Output is \$5/unit
and the price of Capital (P_K) is \$1,300
How many machines should be purchased?

Buy all machines for which the
 $MRP_K > \text{price of capital } (P_K)$
Buy all machines for which the
 $MRP_K > \$1,300$

K	MP_K	MRP_K	MRP_K
0			
1	632	632×5	3160
2	264	264×5	1320
3	200	200×5	1000
4	168	168×5	840
5	146	146×5	730
6	140	140×5	700