Buy all machines for which the MRP_K > price of capital (P_K)

	1	2	3	4	5	6
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

Capital (K)

Labor (L)

K	Total Product

1

632

2

896

1096

4

1264

5

1410

6

1550

0

→ Fix Labor at 5

If we use 5 workers

200

MP_K

Marginal Product K

632 - 0

896 - 632

1096 - 896

1264 - 1096

1410 - 1264

1550 - 1410

MP_K
632
264
200
168
146
140

How many machines should be purchased?

MRP_K

A

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S

5

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a

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h

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e

f

C

a

t

a

K

$

3

0

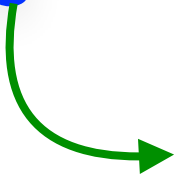Buy all machines for which the $MRP_K > \$1,300$

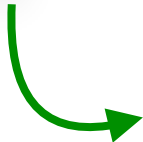These are all output levels that can be produced with 5 workers

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 x 5

264 x 5

632 x 5

264 x 5

200 x 5

632 x 5	
264 x 5	
200 x 5	

168 x 5

632 x 5
264 x 5
200 x 5
168 x 5

146 x 5

632 x 5
264 x 5
200 x 5
168 x 5
146 x 5

140 x 5

632 x 5
264 x 5
200 x 5
168 x 5
146 x 5
140 x 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
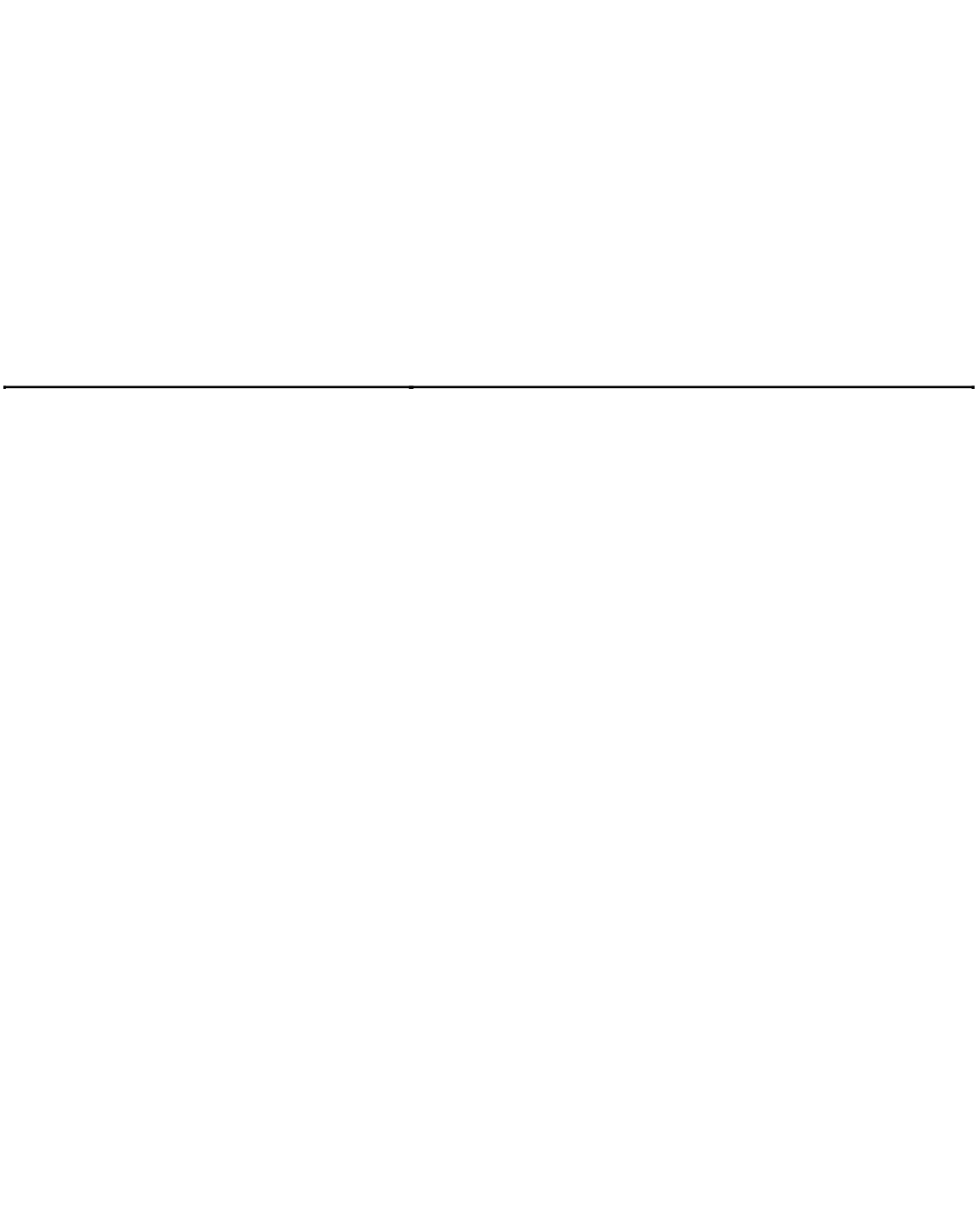
| >1,300 | Buy machine 1 |

| >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

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

Capital (K)		Labor (L)	
6			1550
5			1410
4			1264
3			1096
2			896
1			632
			5

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

K			MRP_K		
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

Buy all machines for which the
MRP_K > 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 x 5	3160
2	264	264 x 5	1320
3	200	200 x 5	1000
4	168	168 x 5	840
5	146	146 x 5	730
6	140	140 x 5	700