



Example:

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**p**

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S



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**t**

*h*

e

*f*

**i**

***r***



*m*

C

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***n***

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**i**

**t**

*h*



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***r***

**b**

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y



***n***

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***r***

e

p

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*f*

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***t***



***r***

*h*

**i**



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e



*m*



**r**

e

W



***r***

**k**



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**t**

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**t**

***t***

*h*

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P



[REDACTED]

[REDACTED]

P

K

[REDACTED]

[REDACTED]



5



0



**T**

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Supppose that:

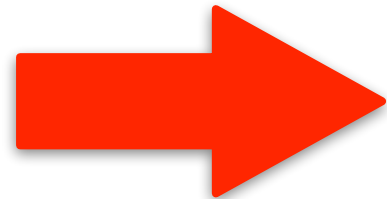
$$\text{MRP}_L = 100$$

$$\text{Revenue per dollar spent on Labor} = \frac{\quad}{P_L = 50}$$

==

2





*The firm gets \$2 in revenue for each  
dollar spent on Labor*

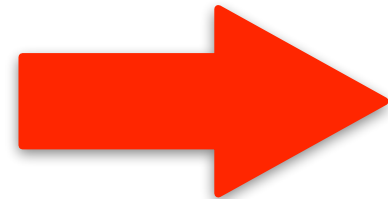
Supppose that :

$$\text{MRP}_K = 150$$

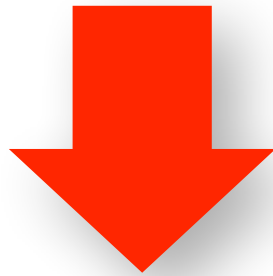
$$\text{Revenue per dollar spent on Capital} = \frac{\quad}{P_K = 50}$$

=

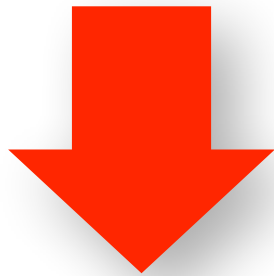
3



*The firm gets \$3 in revenue for each  
dollar spent on Capital*

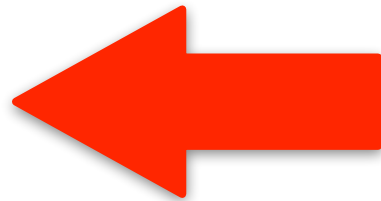


*The firm gets more revenue for each dollar  
spent on Capital*



*The firm should buy one more piece  
of equipment*

*For this new piece of capital, the  $MP_K$  will be lower and thus, the  $MRP_K$  will also be lower...say it is now  $MRP_K = 90$*





New

$$\text{MRP}_K = 90$$

=

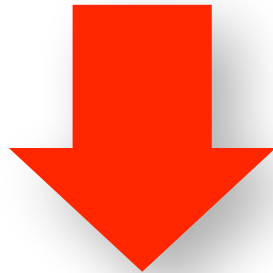
1

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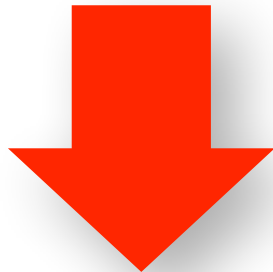
8



*The firm gets \$1.8 in revenue for each  
dollar spent on Capital*

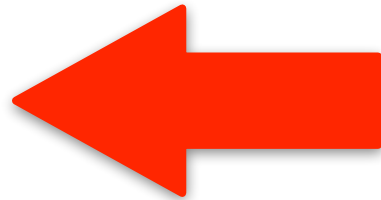


*The firm gets more revenue for each dollar  
spent on Labor*



*The firm should hire one more worker*

*For this new worker, the  $MP_L$  will be lower and thus, the  $MRP_L$  will also be lower...say it is now  $MRP_L = 90$*



New:

$$MRP_L = 90$$

=

1

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88

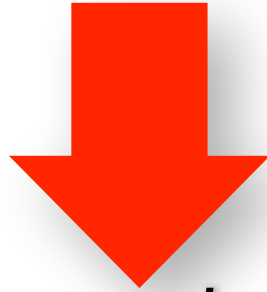




*The firm gets \$1.8 in revenue for each  
dollar spent on Labor*



*The firm gets **the same** revenue for each dollar spent either on **Labor** or on **Capital**. Does this mean the firm now has the optimal mix of  $K$  and  $L$ ?*



*As the firm hires more labor and capital, the MRP drops. The  $MRP_K$  will drop until it will be equal to  $P_K$  and The  $MRP_L$  will drop until it will be equal to  $P_L$*

Eventually:

$$MRP_L = 50$$

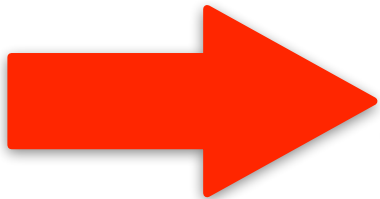
Eventually:

$$\text{MRP}_K = 50$$





The firm gets \$1 in revenue for each dollar spent either on *Capital* or on



*Labor*.  $MRP_K = P_K$  and  $MRP_L = P_L$  and

$MRP_K = MRP_L$  the firm now has the optimum mix of *Labor* and *Capital*



No!  $MRP_K > P_K$  and  $MRP_L > P_L$  The  
firm can make money by hiring  
more workers or buying more  
equipment

*Suppose the firm can either buy one more piece of equipment or hire one more worker. Assume that the  $P_L = P_K = \$50$ . That is, hiring a worker costs the same as buying a machine. What should the firm do?*

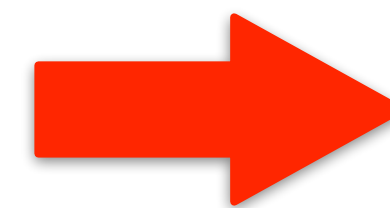
Example: Suppose the firm can either buy one more piece of equipment or hire one more worker. Assume that the  $P_L = P_K = \$50$ . That is, hiring a worker costs the same as buying a machine. What should the firm do?

Eventually:

$$\text{Revenue per dollar spent on Labor} = \frac{MRP_L = 50}{P_L = 50} = 1$$

Eventually:

$$\text{Revenue per dollar spent on Capital} = \frac{MRP_K = 50}{P_K = 50} = 1$$



The firm gets \$1 in revenue for each dollar spent either on Capital or on Labor.  $MRP_K = P_K$  and  $MRP_L = P_L$  and  $MRP_K = MRP_L$  the firm now has the optimum mix of Labor and Capital



No!  $MRP_K > P_K$  and  $MRP_L > P_L$  The firm can make money by hiring more workers or buying more equipment

As the firm hires more labor and capital, the MRP drops. The  $MRP_K$  will drop until it will be equal to  $P_K$  and The  $MRP_L$  will drop until it will be equal to  $P_L$

