

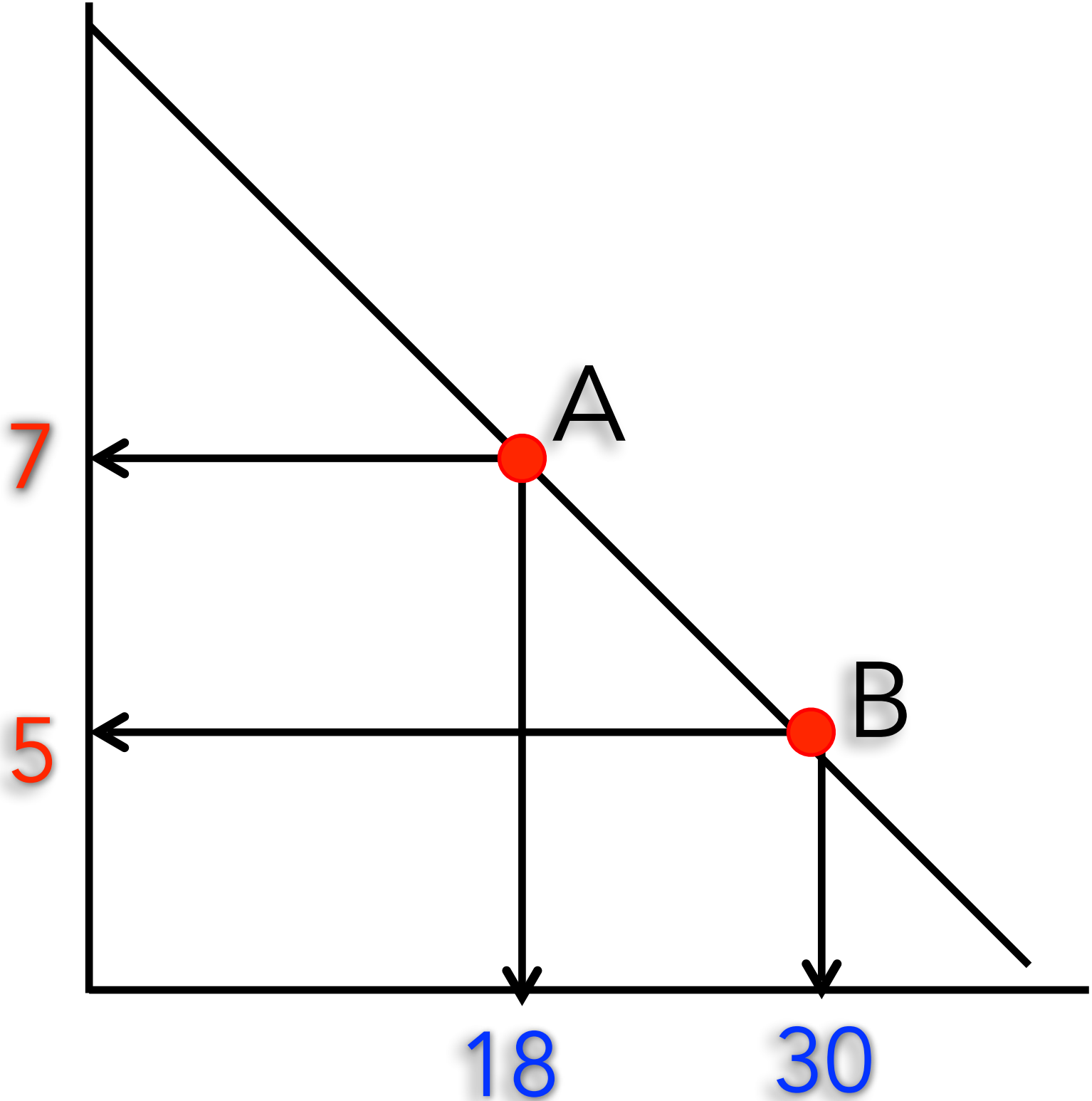






$$e_{p^d} = \frac{\% \Delta Q_d}{\% \Delta \text{Price}}$$

Price	Quantity Demanded



5

7



18

30

50%

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33%

[REDACTED]

[REDACTED]

**=**

**1**

**.**

**5**

**1**



Change in  $Q^d$

$$30 - 18 = 12$$

Average quantity:

$$(30+18)/2 = 24$$



$\% \Delta Q_d$

$$12/24 = 0.5 \times 100 = 50\%$$

Change in price

$$7 - 5 = 2$$

Average price

$$(7 + 5) / 2 = 6$$

$\% \Delta \text{ Price}$

$$2/6 = 0.33 \times 100 = 33\%$$



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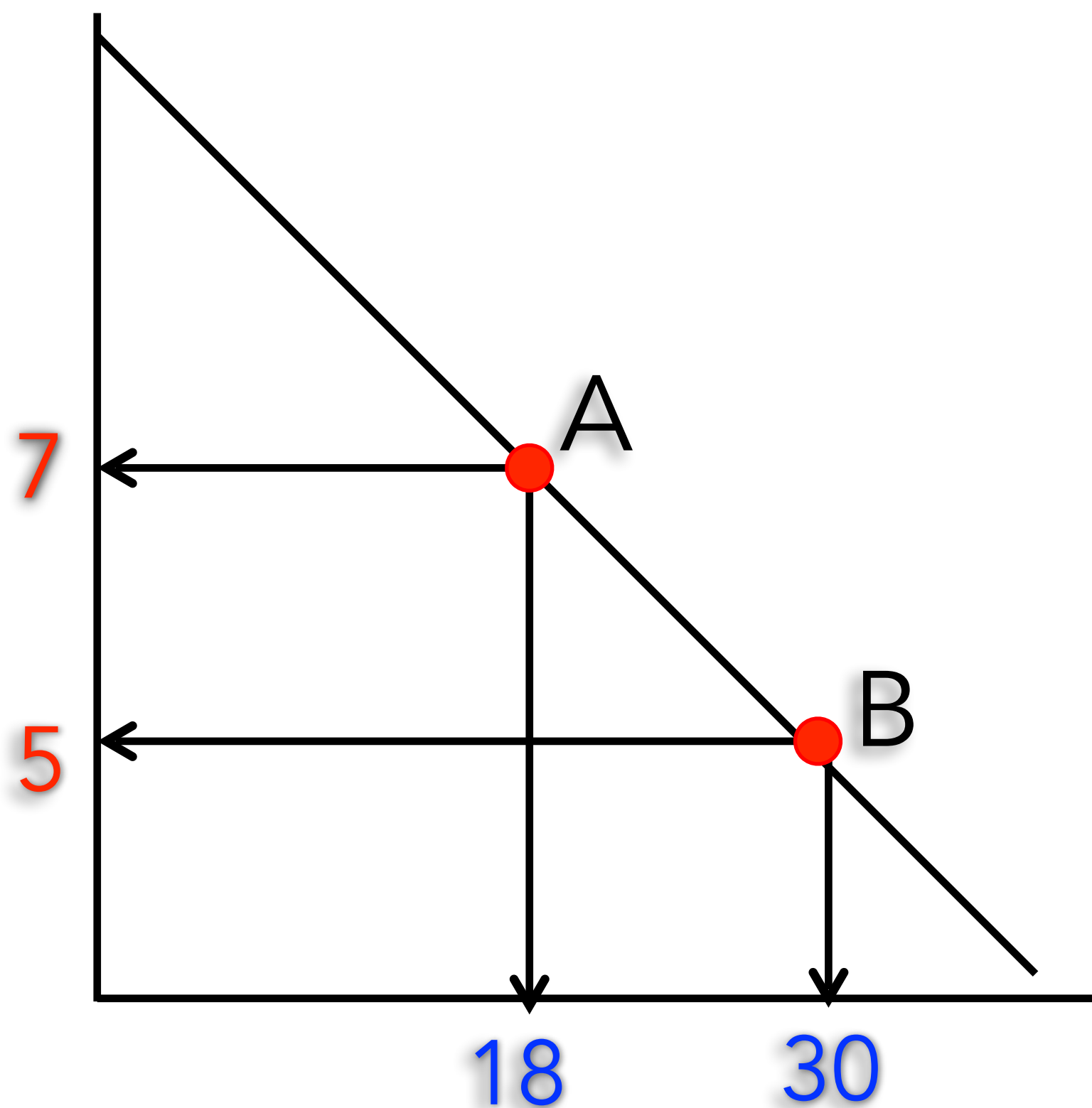


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The price elasticity of demand is **always negative**  
because price and  $Q^d$  move in **opposite directions**:  
**add a negative sign**





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5	30

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Average quantity:

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$\% \Delta Q^d$

$$12 / 24 = 0.5 \times 100 = 50\%$$

Change in price

$$7 - 5 = 2$$

Average price

$$(7 + 5) / 2 = 6$$

$\% \Delta \text{Price}$

$$2 / 6 = 0.33 \times 100 = 33\%$$

$$e_p^d = \frac{\% \Delta Q^d}{\% \Delta \text{Price}} = \frac{50\%}{33\%} = -1.51$$

The price elasticity of demand is **always negative** because price and  $Q^d$  move in **opposite directions**:  
add a negative sign

