







$$e_{p_d} = \frac{\% \Delta Q_d}{\% \Delta \text{Price}}$$

Price	Quantity Demanded

5

7

18



30

50%



33%

[REDACTED]

[REDACTED]

**=**

**1.51**



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

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

%Δ Price

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



h

e



**p**



**r**



C

e

e



a

**S**



t



C



t

**y**







d

e

m

a

n

d



S



a



W

a

Y

S

n

e



g

a

t





**b**

e

C



a

u

**S**

e

**p**

**r**



e



a

n

d

**Q**

d

m







e



n



p

p



S





t

e

d



**r**

e

C



t



n

S



a

d

d



a

n

e

g

t





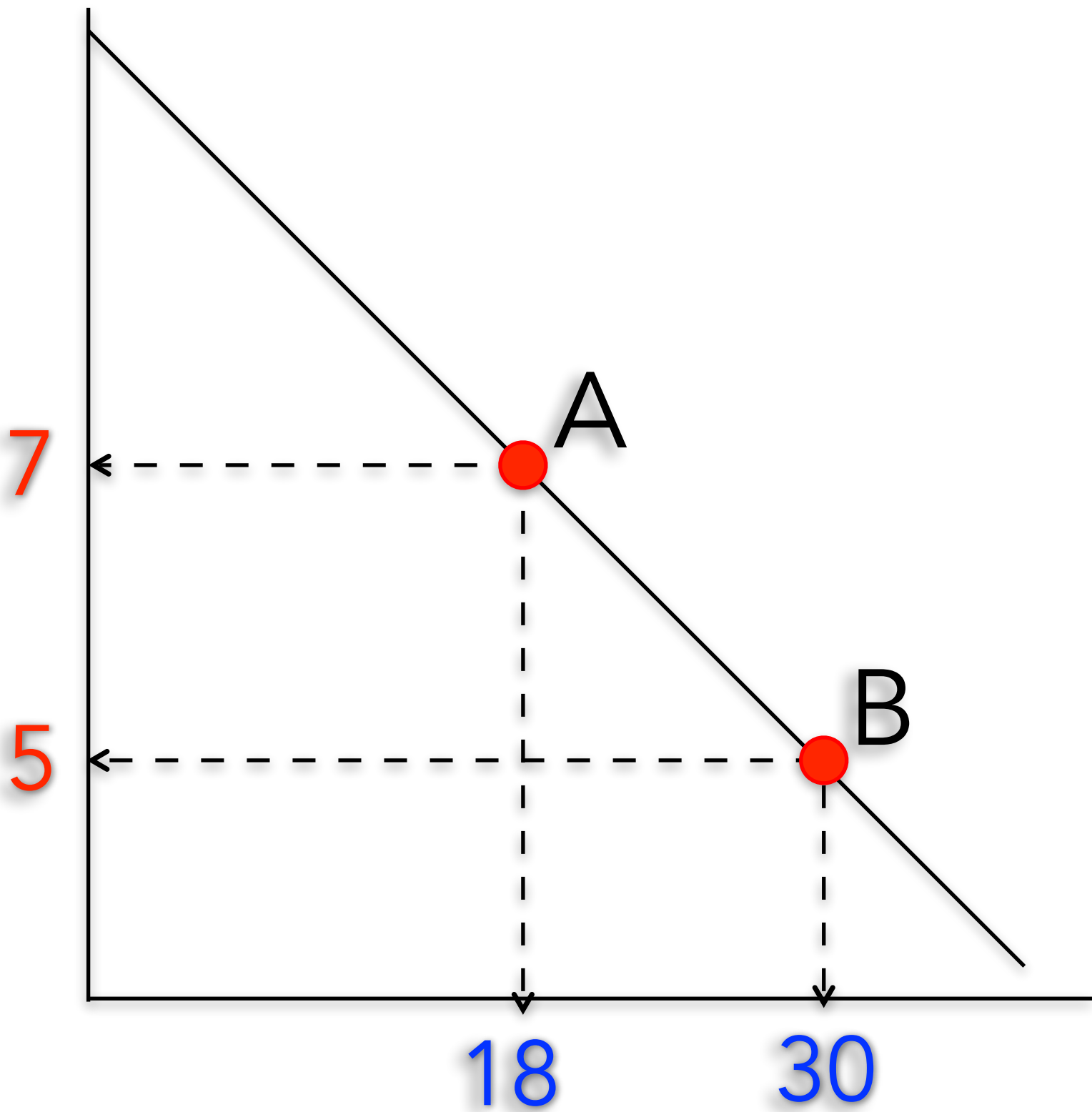
S





g

n



A 50% Change  
in Quantity  
Demanded



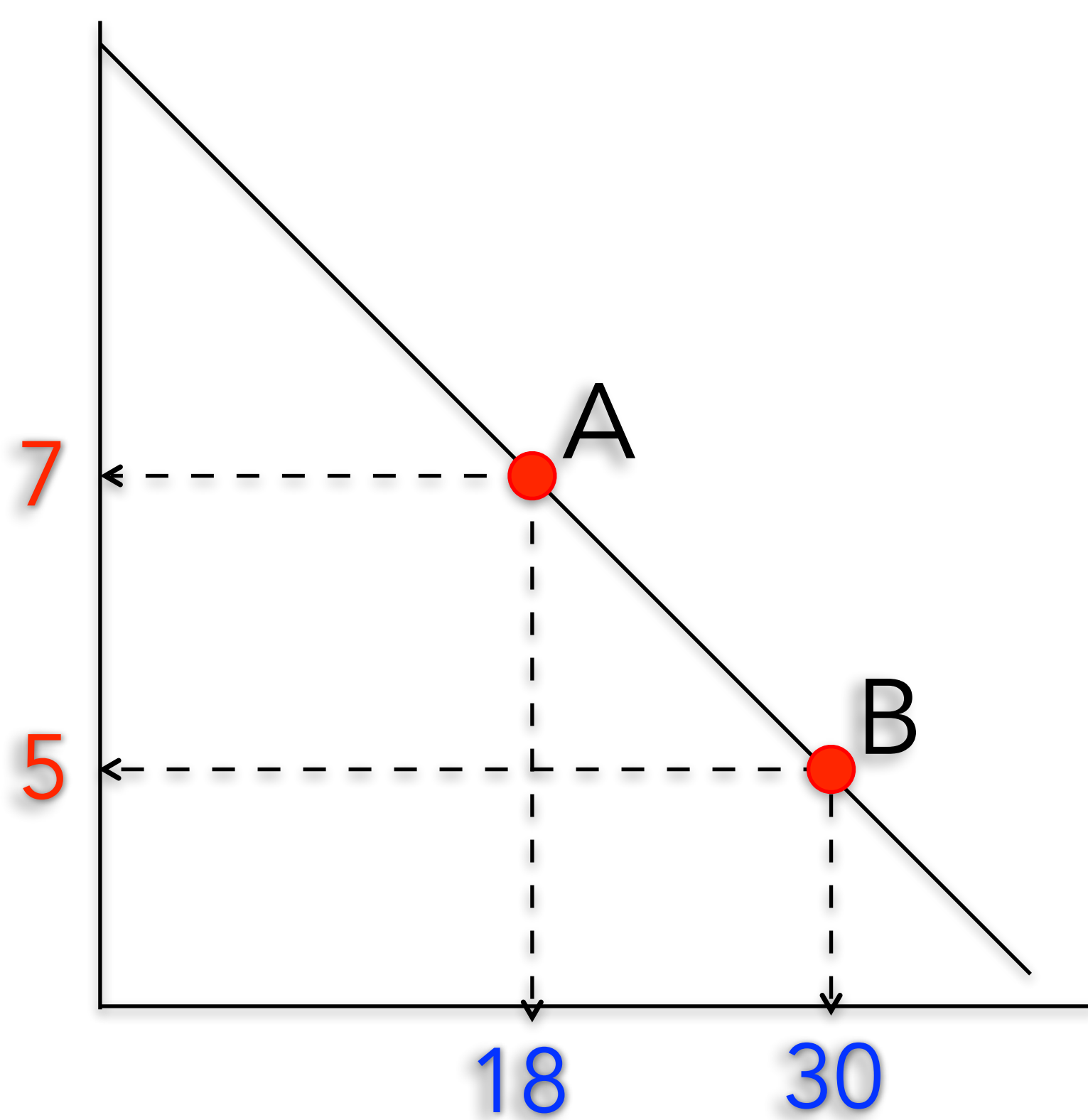
A 33%  
Change in  
price



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







Price	Quantity Demanded
7	18
5	30

A 33% Change in price

A 50% Change in Quantity Demanded

Change in  $Q^d$   
 $30 - 18 = 12$

Average quantity:  
 $(30 + 18) / 2 = 24$

$$\% \Delta Q^d = \frac{12}{24} = 0.5 \times 100 = 50\%$$

Change in price  
 $7 - 5 = 2$

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

$$\% \Delta \text{Price} = \frac{2}{6} = 0.33 \times 100 = 33\%$$

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

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

