

Exp Evaluate if possible or  
state meaningless

المقام صفر

$$\frac{\text{numerator}}{\text{denominator}} = \frac{\text{بسط}}{\text{مقام}}$$

①  $\frac{\sqrt{3}}{0}$  meaningless

②  $\frac{0}{\sqrt{3}} = 0$  ✓

$$\frac{0}{-1} = 0, \quad \frac{0}{0.91} = 0, \dots$$

③  $\frac{\sqrt{3}}{\sqrt{3}} = 1$  ✓

④  $\frac{0}{0} = \text{meaningless}$

⑤ 
$$\begin{aligned} (-2)^3 + 1 &= -2 \times -2 \times -2 + 1 \\ &= -8 + 1 \\ &= -7 \end{aligned}$$

a) -7

b) 9

c) -9

d) 7

$$- - 8 + 1 \\ = -7$$

1 of 7

$$\textcircled{6} \quad \frac{(-1)(-2) - (4)(-3)}{-7 + 2} = \frac{2 - -12}{-5} \\ = \frac{14}{-5}$$

$$\textcircled{7} \quad -\frac{1}{3} + 5 - \frac{2}{3} + \frac{1}{4} \\ \frac{-1-2}{3} + 5 + \frac{1}{4} = -\frac{3}{3} + 5 + \frac{1}{4} \\ = -1 + 5 + \frac{1}{4} \\ = 4 + \frac{1}{4} \\ = \frac{16}{4} + \frac{1}{4} = \frac{17}{4}$$

A priority in calculation: 1) Brackets ( )  
2) Power <sup>3</sup>  
→ 3)  $\times, \div$  from left to right

4)  $+, -$  from left to

④  $\pm$  from left to right

$$\underline{\underline{\text{Exp 1}}} \quad ① \quad ((-2)^2 - 2) + 2 = (4 - 2) + 2$$

$$= 2 + 2$$

$$= 4$$

$$② \quad 8 \div 3(3 + 1 - 2)$$

$$8 \div 3(4 - 2) = 8 \div 3(2)$$

$$= (8 \div 3) \times 2$$

$$= \boxed{\frac{8}{3} \times \frac{2}{1}}$$

ضرب الكسور  
لا يوجد  
توحيد مقامات

$$= \frac{8 \times 2}{3 \times 1} = \frac{16}{3}$$

~~$$8 \div 6$$

$$\frac{8}{6} = \frac{4}{3}$$~~

a)  $\frac{4}{3}$

b)  $\frac{16}{3}$

c)  $\dots$

$$\frac{2}{3} \times \frac{3}{2} = \frac{2 \times 3}{3 \times 2} = \frac{6}{6} = 1 \quad \bigg| \quad \frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$$

$$\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$$

$$\frac{2}{3} + \frac{3}{2} = \frac{2 \times 2}{3 \times 2} + \frac{3 \times 3}{2 \times 3} = \frac{4}{6} + \frac{9}{6} = \frac{13}{6}$$

Exp Insert  $\boxed{<}$ ,  $\boxed{>}$ ,  $\boxed{=}$

①  $-3 \leq 0.1$



A number line diagram showing the interval from -3 to 0.1. The number line is labeled with -3, -2, -1, 0, and 0.1. A bracket above the line indicates the interval from -3 to 0.1. The point 0.1 is marked with a red dot and labeled '0.1'.

②  $\frac{1}{2} + \frac{1}{3} \square \frac{5}{6} \Rightarrow \frac{5}{6} \boxed{=}$   $\frac{5}{6}$

$$\frac{1 \times 3}{2 \times 3} + \frac{1 \times 2}{3 \times 2}$$

$$\frac{3}{6} + \frac{2}{6}$$

$$\frac{5}{6}$$

3      0.666       $\boxed{<}$        $\frac{2}{3}$

$$0.666 \quad \boxed{<} \quad 0.666 \underline{66666} \dots$$

$$0.666 \boxed{<} 0.666\underline{66666}\dots$$

$$\textcircled{4} \quad \pi \quad \boxed{>} \quad 3.14$$

$\downarrow$   
 $\frac{22}{7}$

$$3.142857\dots \boxed{>} 3.14$$

$$\textcircled{5} \quad \underbrace{|-3|}_{3} + \underbrace{|2|}_{2} \quad \boxed{>} \quad \underbrace{|-3+2|}_{|-1|}$$

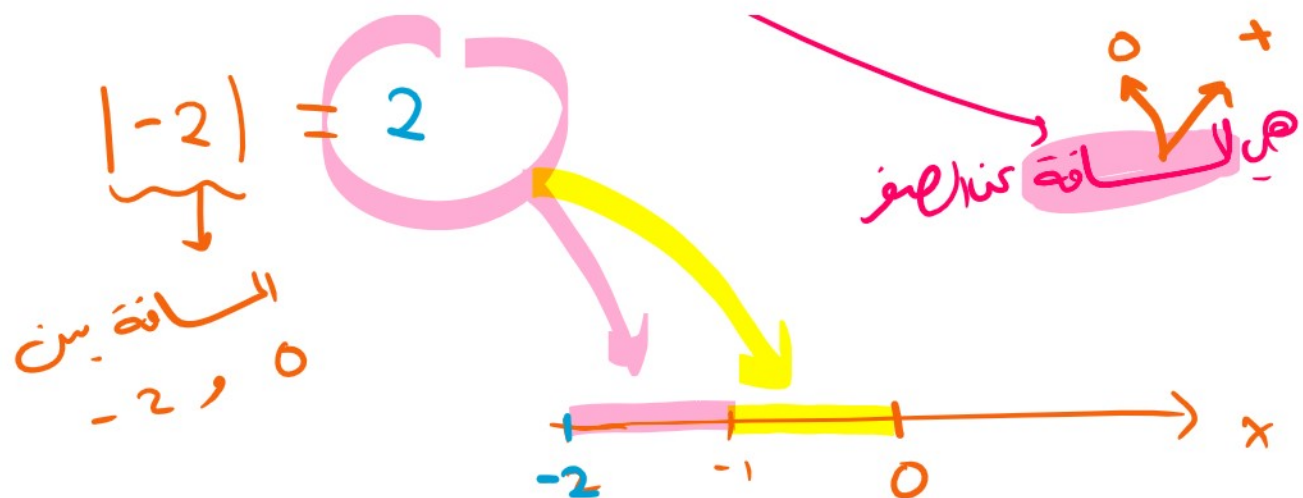
$$3 + 2 \quad \boxed{>} \quad 1$$

Absolute Value

القيمة المطلقة







Exp ①  $| 4 | = 4$

②  $| -\frac{3}{2} | = \frac{3}{2}$

③  $| 0.987 | = 0.987$

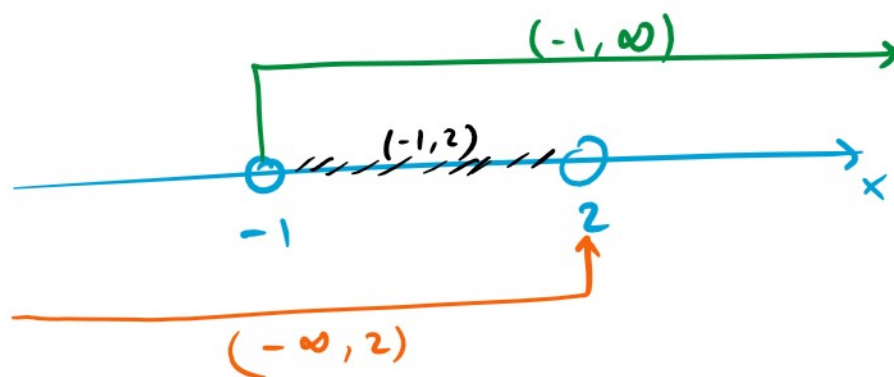
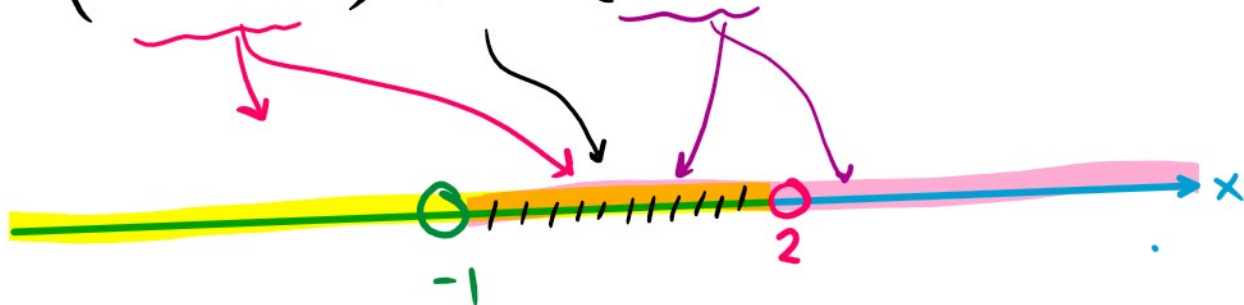
④  $| 0 | = 0$

⑤  $| -\sqrt{5} | = \sqrt{5}$

$$| a | = \begin{cases} a & \text{if } a \geq 0 \\ -a & \text{if } a \leq 0 \end{cases}$$

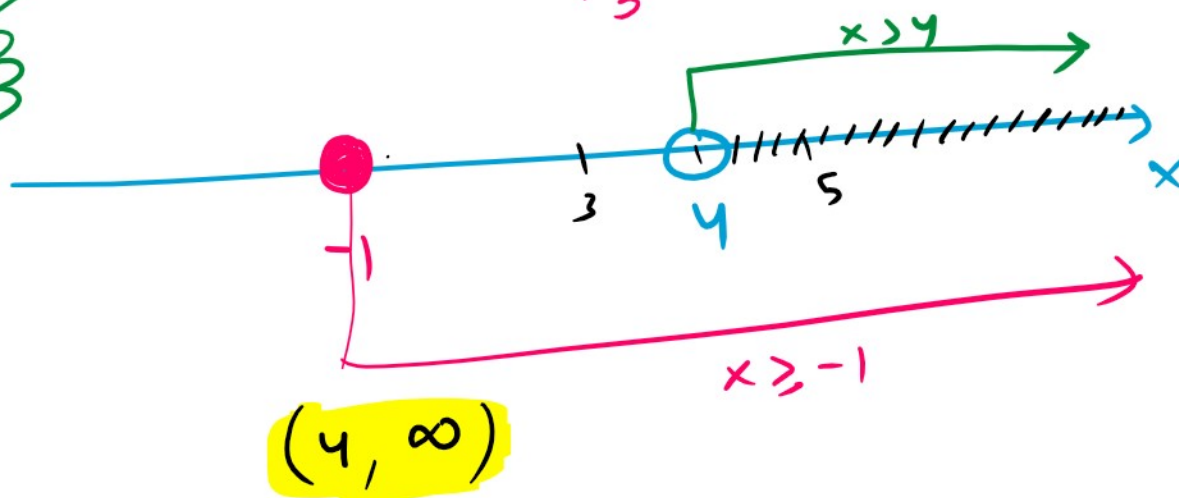
Exp Find and graph

①  $(-\infty, 2) \cap (-1, \infty) = (-1, 2)$



②  $x > 4$  and  $x \geq -1$

3



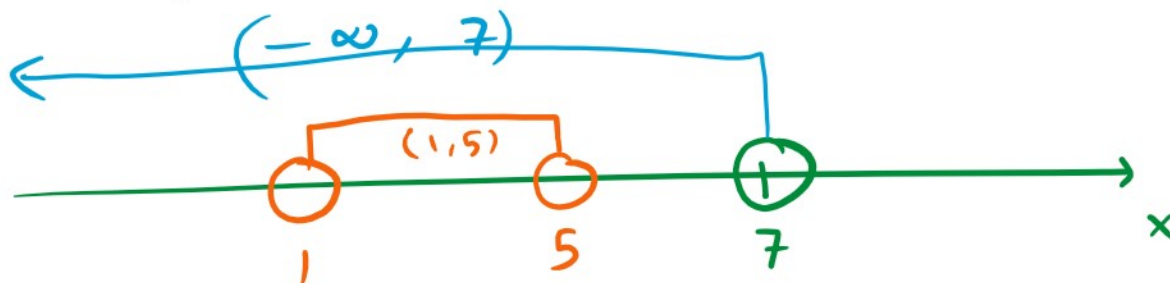
or

Union :

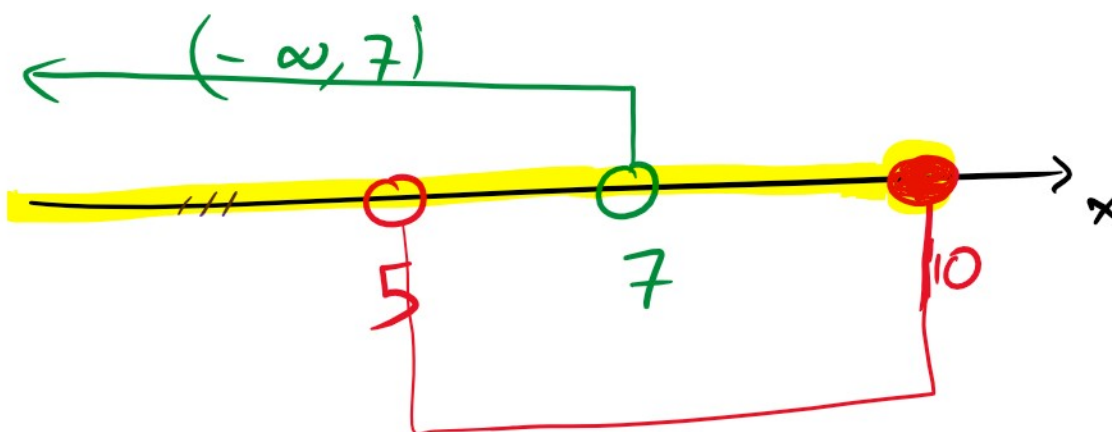
الحد

$\cup$  Union : اتحاد  
 and  $\cap$  intersection : التقاطع

(3)  $(-\infty, 7) \cup (1, 5) = (-\infty, 7)$



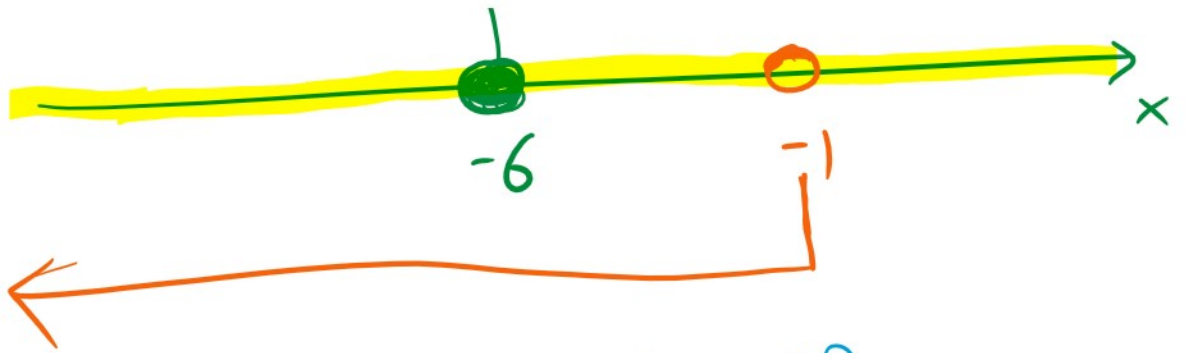
(4)  $(-\infty, 7) \cup (5, 10] = (-\infty, 10]$



(5)  $x \geq -6$  or  $x < -1$   
 $\cup$   
 $x \geq -6$



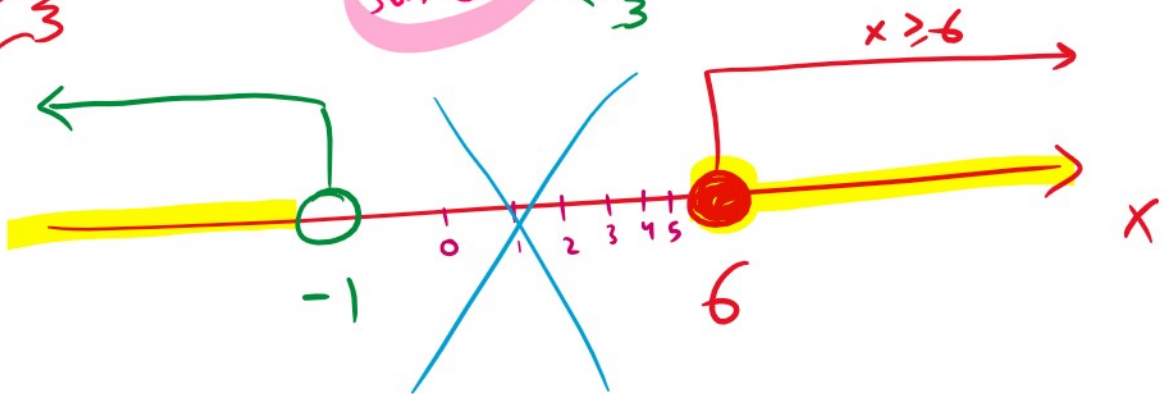




$$(-\infty, \infty) = \mathbb{R}$$

⑥  $x \geq 6$  or  $x < -1$

U (union) symbol in pink, with Arabic 'أو' (or) and English 'or' written inside. A green squiggly line is next to the 'or'.



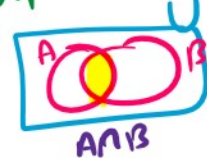
$$(-\infty, -1) \cup [6, \infty)$$

and



intersection

تقاطع

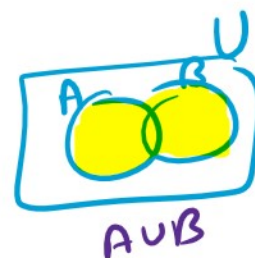


or



union

اتحاد



$$\overbrace{A \cup B}$$

