

☐

Diker $A = \{x \mid x^2 - 1 = 0\}$

☐

$$B = \{x \mid x^2 + x - 2 = 0\}$$

☐

$$C = \{x \mid x^3 - x^2 = 0\}$$

☐☐

$$A = \{x \mid x^2 - 1 = 0\}$$

☐

$$= \{x \mid (x+1)(x-1) = 0\}$$

☐

$$= \{x \mid x_1 = -1, x_2 = 1\}$$

☐

$$= \{-1, 1\} //$$

☐

$$B = \{x \mid x^2 + x - 2 = 0\}$$

☐

$$= \{x \mid (x-1)(x+2) = 0\}$$

☐

$$= \{x \mid x-1=0, x+2=0\}$$

☐

$$= \{x \mid x_1 = 1, x_2 = -2\}$$

☐

$$= \{-2, 1\} //$$

☐

$$C = \{x \mid x^3 - x^2 = 0\}$$

☐

$$= \{x \mid x^2(x-1) = 0\}$$

☐

$$= \{x \mid x^2 = 0, x-1=0\}$$

☐

$$= \{x \mid x_1 = 0, x_2 = 1\}$$

☐

$$= \{0, 1\} //$$

☐

a) $A \cup (B \cap C)$

☐

$$B \cap C = \{-2, 1\} \cap \{0, 1\} = \{1\}$$

☐

$$A \cup (B \cap C) = \{-1, 1\} \cup \{1\} = \{-1, 1\} //$$

☐

b) $(A \cup B) \cap C$

☐

$$A \cup B = \{-1, 1\} \cup \{-2, 1\} = \{-2, -1, 1\}$$

☐

$$(A \cup B) \cap C = \{-2, -1, 1\} \cap \{0, 1\} = \{1\} //$$

☐

No. _____

Date: _____

c) $(A-B) \cup C$

$$A-B = \{-1, 1\} - \{-2, 1\}$$

$$(A-B) \cup C = \{-1\} \cup \{0, 1\} = \{-1, 0, 1\}$$

No. _____

Date: _____

2

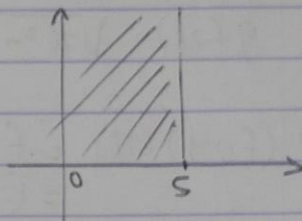
a) $-5 \leq 2x - 5 < 5$

$$-5 + 5 \leq 2x < 5 + 5$$

$$0 \leq 2x < 10$$

$$\frac{0}{2} \leq x < \frac{10}{2}$$

$$0 \leq x < 5$$



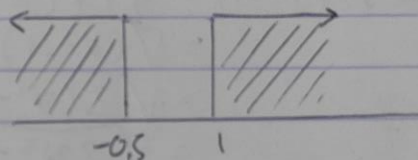
b) $\frac{2x+1}{x-1} < 0$

$$2x + 1 = 0$$

$$2x = -1$$

$$x = \frac{-1}{2}$$

$$x = -0,5$$



$$x - 1 \neq 0$$

$$x \neq 1$$

c) $|x-3| \geq 2$

$$(x-3) \geq 2 \quad -(x-3) \geq 2$$

$$x-3 \geq 2$$

$$x \geq 2+3$$

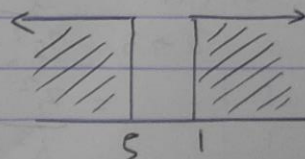
$$x \geq 5$$

$$-x+3 \geq 2$$

$$-x \geq 2-3$$

$$-x \geq -1$$

$$x \leq 1$$



3

$$f(x) = x^2 - 1$$

$$g(x) = \sqrt{x^2 - 1}$$

a)

$$\begin{aligned}(f \circ g)(x) &= f(g(x)) \\ &= (\sqrt{x^2 - 1})^2 - 1 \\ &= x^2 - 1 - 1 \\ &= x^2 - 2\end{aligned}$$

b)

$$\begin{aligned}(g \circ f)(x) &= g(f(x)) \\ &= \sqrt{(x^2 - 1)^2 - 1} \\ &= \sqrt{2(x^2 - 1) - 1} \\ &= \sqrt{2x^2 - 3}\end{aligned}$$

4

$$a) \lim_{x \rightarrow 2} (x^2 + 3x + 1)$$

$$x \rightarrow 2$$

$$= (2^2 + 3 \cdot 2 + 1)$$

$$= 4 + 6 + 1$$

$$= 11$$

b)

$$\lim_{x \rightarrow 3} \frac{x^2 - 1}{x^2 + x - 2}$$

$$= \frac{3^2 - 1}{3^2 + 3 - 2}$$

$$= \frac{9 - 1}{9 + 3 - 2} = \frac{8}{10}$$

5 Apakah $f(x) = |x-1|$ kontinu di $x=1$?

fungsi f kontinu di $x=c$ jika :

① $f(c)$ terdefinisi

② $\lim_{x \rightarrow c^-} f(x) = \lim_{x \rightarrow c^+} f(x) = f(c)$

$$|x-1| = \begin{cases} x-1, & \text{jika } x \geq 1 \\ -x+1, & \text{jika } x < 1 \end{cases}$$

① $f(1) = |1-1| = |0| = 0 \rightarrow$ terpenuhi

② $\lim_{x \rightarrow 1^-} |x-1| = -1+1 = 0$

$\lim_{x \rightarrow 1^+} |x-1| = 1-1 = 0$

$\lim_{x \rightarrow 1^-} |x-1| = \lim_{x \rightarrow 1^+} |x-1| = f(1) \rightarrow$ terpenuhi

maka $f(x) = |x-1|$ kontinu di $x=1$