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1.

$|x| \leq a \Leftrightarrow -a \leq x \leq a, a > 0$ 02

$\sqrt[r]{r-s} = \sqrt[r]{r} - \sqrt[r]{s}$ 02

$a < b > 0 \cdot c < d \cdot e \quad (a, b, c, d, e \in \mathbb{R})$ 02

$\sqrt{a^2} = a$ 02

$|a| = |-a|, a \in \mathbb{R}$ 02

2.

$\sqrt[r]{r \cdot s} = \sqrt[r]{r} \cdot \sqrt[r]{s}$ 15

B

1.

$x, y: |x-3| < 1, |2y-5| < 3$ 15

2.

$2 < x < 4, 1 < y < 4,$
 i) $2x - 3y$ ii) $\frac{x}{y}$ 10

1.

$3 - \sqrt{10} \cdot 3 + \sqrt{10} = -1$ 8

2.

$\sqrt{19-6\sqrt{10}} - \sqrt{19+6\sqrt{10}} = -6$ 7

3.

$\sqrt{19-6\sqrt{10}} - \sqrt{19+6\sqrt{10}} = -6$ 10

1.

$A = \frac{\sqrt{3}}{\sqrt{5}-\sqrt{3}} + \frac{\sqrt{5}}{\sqrt{5}+\sqrt{3}} = \sqrt{13 - \sqrt{13 + \sqrt{25 + \sqrt{4}}}}$ 12

2.

$\frac{\sqrt{x^2}}{x} - \frac{\sqrt{x^2-4x+4}}{x-2}, 0 < x < 2, = 2$ 6

3.

$\frac{|y-|}{\Gamma} < \frac{|y-|}{\Gamma}$ 7

1.) ,) ,) ,) ,)

2.

B

1.

$$|x - 3| < 1 \Leftrightarrow -1 < x - 3 < 1 \Leftrightarrow -1 + 3 < x - 3 + 3 < 1 + 3 \Leftrightarrow 2 < x < 4. \quad x \in (2, 4)$$

$$|2y - 5| < 3 \Leftrightarrow -3 < 2y - 5 < 3 \Leftrightarrow -3 + 5 < 2y - 5 + 5 < 3 + 5 \Leftrightarrow 2 < 2y < 8 \Leftrightarrow 1 < y < 4$$

$$y \in (1, 4)$$

$$2. 2 < x < 4 \quad (1) \quad \Leftrightarrow \quad 4 < 2x < 8 \quad (3)$$

$$1 < y < 4 \quad (2) \Leftrightarrow -3 > -3y > -12 \quad \Leftrightarrow \quad -12 < -3y < -3 \quad (4)$$

$$(3), (4) \quad \mu \\ 4 + (-12) < 2x + (-3y) < 8 + (-3) \Leftrightarrow -8 < 2x - 3y < 5$$

$$1 < y < 4 \Leftrightarrow 1 > \frac{1}{y} > \frac{1}{4} \Leftrightarrow \frac{1}{4} < \frac{1}{y} < 1 \quad (5)$$

$$(1), (5) \quad \mu \\ 2 \cdot \frac{1}{4} < x \cdot \frac{1}{y} < 4 \cdot 1 \Leftrightarrow \frac{1}{2} < \frac{x}{y} < 4$$

$$= 3 - \sqrt{10} \quad = 3 + \sqrt{10}$$

$$1. \cdot = (3 - \sqrt{10})(3 + \sqrt{10}) = 3^2 - 10 = -1$$

$$2. \quad ^2 = (3 - \sqrt{10})^2 = \dots = 19 - 6\sqrt{10} \quad \mu \quad ^2 = (3 + \sqrt{10})^2 = \dots = 19 + 6\sqrt{10}$$

$$3. \sqrt{19 - 6\sqrt{10}} - \sqrt{19 + 6\sqrt{10}} = \sqrt{(3 - \sqrt{10})^2} - \sqrt{(3 + \sqrt{10})^2} = |3 - \sqrt{10}| - |3 + \sqrt{10}| = -3 + \sqrt{10} - (3 + \sqrt{10}) = -6$$

$$1. A = \frac{\sqrt{3}}{\sqrt{5} - \sqrt{3}} + \frac{\sqrt{5}}{\sqrt{5} + \sqrt{3}} = \frac{\sqrt{3} \cdot (\sqrt{5} + \sqrt{3})}{(\sqrt{5} - \sqrt{3})(\sqrt{5} + \sqrt{3})} + \frac{\sqrt{5}(\sqrt{5} - \sqrt{3})}{(\sqrt{5} + \sqrt{3})(\sqrt{5} - \sqrt{3})} = \frac{\sqrt{15} + 3 + 5 - \sqrt{15}}{(\sqrt{5})^2 - (\sqrt{3})^2} = \frac{8}{2} = 4$$

$$= \sqrt{13 - \sqrt{13 + \sqrt[3]{25 + \sqrt{4}}}} = \sqrt{13 - \sqrt{13 + \sqrt[3]{25 + 2}}} = \sqrt{13 - \sqrt{13 + \sqrt[3]{27}}} = \sqrt{13 - \sqrt{13 + 3}} = \sqrt{13 - \sqrt{16}} = \sqrt{13 - 4} = \sqrt{9} = 3$$

$$2. \quad 0 < x < 2, \quad = \frac{\sqrt{x^2}}{x} - \frac{\sqrt{x^2 - 4x + 4}}{x - 2} = \frac{|x|}{x} - \frac{\sqrt{(x-2)^2}}{x-2} = \frac{|x|}{x} - \frac{|x-2|}{x-2} = \frac{x}{x} - \frac{-(x-2)}{x-2} = 1 - (-1) = 2$$

$$3. \frac{|y - |}{\Gamma} - < \frac{|y - |}{-} \Rightarrow \frac{|y - 2|}{2} - 2 < \frac{|y - 2|}{3} - \frac{4}{3} \Leftrightarrow \dots \Leftrightarrow |y - 2| < 4 \\ \Leftrightarrow -4 < y - 2 < 4 \Leftrightarrow -2 < y < 6$$

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1.

- μμ , , ,
-) $|x| \geq a \Leftrightarrow x \leq -a \vee x \geq a, a > 0$ **02**
-) $a > 0, \mu$, : $\sqrt[r]{r+s} = \sqrt[r]{r} + \sqrt[r]{s}$. **02**
-) $a < 0 < 0 \cdot < \cdot$ (, , $\in \mathbb{R}$) **02**
-) $\mu \mu \mu$, $\sqrt{a^2} = a$ **02**
-) $\mu \mu$ **02**

2.

$|r \cdot s| = |r| \cdot |s|$. **15**

B

-) $\mu \mu \begin{matrix} x, y \\ |x-4| < 2 \\ |2y-7| < 5 \end{matrix}$: **15**
-) $2 < x < 6 \quad 1 < y < 6,$ $\mu \mu$.
- i) $3x - 2y$ ii) $\frac{x}{y}$ **10**

$= 2 - \sqrt{5} \quad = 2 + \sqrt{5}$.

- 1. $\cdot = -1$. **8**
- 2. $\mu \quad \mu \quad \mu$ **7**
- 3. $\sqrt{9-4\sqrt{5}} - \sqrt{9+4\sqrt{5}} = -4$ **10**

$\mu \quad A = \frac{\sqrt{5}}{\sqrt{7}-\sqrt{5}} + \frac{\sqrt{7}}{\sqrt{7}+\sqrt{5}} = \sqrt[3]{3} \cdot \sqrt[3]{4+\sqrt{7}} \cdot \sqrt[3]{4-\sqrt{7}}$

- 1. $\frac{=6}{=3}$ **12**
- 2. $= \frac{\sqrt{x^2}}{x} - \frac{\sqrt{x^2-6x+9}}{x-3}, 0 < x < 3,$ $= 2$ **6**
- 3. μ , : **7**

$\frac{|y - |}{\Gamma} < \frac{|y - |}{\Gamma}$

1.) ,) ,) ,) ,)

2.

B

1.

$$|x - 4| < 2 \Leftrightarrow -2 < x - 4 < 2 \Leftrightarrow -2 + 4 < x - 4 + 4 < 2 + 4 \Leftrightarrow 2 < x < 6. \quad x \in (2, 6)$$

$$|2y - 7| < 5 \Leftrightarrow -5 < 2y - 7 < 5 \Leftrightarrow -5 + 7 < 2y - 7 + 7 < 5 + 7 \Leftrightarrow 2 < 2y < 12 \Leftrightarrow 1 < y < 6$$

$$y \in (1, 6)$$

$$2. \quad 2 < x < 6 \quad (1) \quad \Leftrightarrow \quad 6 < 3x < 18 \quad (3)$$

$$1 < y < 6 \quad (2) \Leftrightarrow -2 > -2y > -12 \quad \Leftrightarrow \quad -12 < -2y < -2 \quad (4)$$

$$(3), (4) \quad \mu \\ 6 + (-12) < 3x + (-2y) < 18 + (-2) \Leftrightarrow -6 < 3x - 2y < 16$$

$$1 < y < 6 \Leftrightarrow 1 > \frac{1}{y} > \frac{1}{6} \Leftrightarrow \frac{1}{6} < \frac{1}{y} < 1 \quad (5)$$

$$(1), (5) \quad \mu \\ 2 \cdot \frac{1}{6} < x \cdot \frac{1}{y} < 6 \cdot 1 \Leftrightarrow \frac{1}{3} < \frac{x}{y} < 6$$

$$= 2 - \sqrt{5} \quad = 2 + \sqrt{5}$$

$$1. \quad \cdot = (2 - \sqrt{5})(2 + \sqrt{5}) = 2^2 - 5 = -1$$

$$2. \quad ^2 = (2 - \sqrt{5})^2 = \dots = 9 - 4\sqrt{5} \quad \mu \quad ^2 = (2 + \sqrt{5})^2 = \dots = 9 + 4\sqrt{5}$$

$$3. \quad \sqrt{9 - 4\sqrt{5}} - \sqrt{9 + 4\sqrt{5}} = \sqrt{(2 - \sqrt{5})^2} - \sqrt{(2 + \sqrt{5})^2} = |2 - \sqrt{5}| - |2 + \sqrt{5}| = -2 + \sqrt{5} - (2 + \sqrt{5}) = -4$$

1.

$$A = \frac{\sqrt{5}}{\sqrt{7} - \sqrt{5}} + \frac{\sqrt{7}}{\sqrt{7} + \sqrt{5}} = \frac{\sqrt{5} \cdot (\sqrt{7} + \sqrt{5})}{(\sqrt{7} - \sqrt{5})(\sqrt{7} + \sqrt{5})} + \frac{\sqrt{7}(\sqrt{7} - \sqrt{5})}{(\sqrt{7} + \sqrt{5})(\sqrt{7} - \sqrt{5})} = \frac{\sqrt{35} + 5 + 7 - \sqrt{35}}{(\sqrt{7})^2 - (\sqrt{5})^2} = \frac{12}{2} = 6$$

$$= \sqrt[3]{3} \cdot \sqrt[3]{4 + \sqrt{7}} \cdot \sqrt[3]{4 - \sqrt{7}} = \sqrt[3]{3(4 + \sqrt{7})(4 - \sqrt{7})} = \sqrt[3]{3(4^2 - (\sqrt{7})^2)} = \sqrt[3]{3(16 - 7)} = \sqrt[3]{3 \cdot 9} = \sqrt[3]{27} = 3$$

$$2. \quad 0 < x < 3, \quad = \frac{\sqrt{x^2}}{x} - \frac{\sqrt{x^2 - 6x + 9}}{x - 3} = \frac{|x|}{x} - \frac{\sqrt{(x-3)^2}}{x-3} = \frac{|x|}{x} - \frac{|x-3|}{x-3} = \frac{x}{x} - \frac{-(x-3)}{x-3} = 1 - (-1) = 2$$

$$3. \quad \frac{|y - |}{\Gamma} - < \frac{|y - |}{-} \Rightarrow \frac{|y - 2|}{2} - 3 < \frac{|y - 2|}{3} - \frac{6}{3} \Leftrightarrow \dots \Leftrightarrow |y - 2| < 6$$

$$\Leftrightarrow -6 < y - 2 < 6 \Leftrightarrow -4 < y < 8$$