Thứ ngày

Vì $(x+1)^2 \geq 0$

$\Rightarrow A \geq 0 - 13 = -\frac{7}{4}$

Dấu "=" xảy ra khi $x = -1$

Vậy $\min A = -\frac{7}{4}$ khi $x = -1$

b) Vì $|3x - \frac{1}{2}| \geq 0$

$\Rightarrow B = 2018 - |3x - \frac{1}{2}| \leq 2018 - 0$

≤ 2018

Dấu "=" xảy ra khi $x = \frac{1}{6}$

Vậy $\max B = 2018$ khi $x = \frac{1}{6}$

Bài 1:

a) $\frac{2}{3} + (-\frac{5}{7}) + \frac{1}{12} - (-\frac{5}{7})$

$= \frac{2}{3} + \frac{1}{12} + (-\frac{5}{7}) - (-\frac{5}{7})$

$= \frac{9}{12} + 0$

$= \frac{9}{12}$

b) $(-2)^2 \cdot \frac{7}{20} - |-\frac{13}{20}|$

$= 4 \cdot \frac{7}{20} - \frac{13}{20}$

$= \frac{1}{5} - \frac{13}{20}$

$= \frac{15}{20} = \frac{3}{4}$

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c) $25 \cdot \left(-\frac{1}{5}\right)^3 + \frac{1}{5} - 2\left(-\frac{1}{2}\right)^2 - \frac{1}{2}$

$= 25 \cdot \frac{-1}{125} + \frac{1}{5} - 2 \cdot \frac{1}{4} - \frac{1}{2}$

$= \frac{-1}{5} + \frac{1}{5} - \frac{1}{2} - \frac{1}{2}$

$= 0$

d) $\frac{-10}{11} \cdot \frac{1}{4} + \frac{2}{11} \cdot \frac{10}{11}$

$= \frac{10}{11}\left(-\frac{1}{4} + \frac{2}{11}\right)$

$= \frac{10^5}{11} \cdot \frac{-9}{18}$

$= \frac{-45}{99}$

e) $\frac{1}{2} + \left(\frac{16}{21} + \frac{23}{13}\right) - \left(\frac{14}{13} - \frac{5}{21}\right)$

$= \frac{1}{2} + \frac{16}{21} + \frac{23}{13} - \frac{14}{13} + \frac{5}{21}$

$= \frac{16}{21} \frac{15}{21} + \frac{23}{13} - \frac{14}{13} + \frac{1}{2}$

$= 1 + 1 + \frac{1}{2}$

$= 2 + \frac{1}{2}$

$= \frac{5}{2}$

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f) $\frac{15^{15} \cdot 5^{10}}{47 \cdot 25^{13}} + \left(\frac{2018}{2019}\right)^0$

Bài 2:

a) $\frac{2}{3}x - \frac{4}{9} = -\frac{5}{27}$

$\frac{2}{3}x = -\frac{5}{27} + \frac{4}{9}$

$\frac{2}{3}x = \frac{7}{27}$

$x = \frac{7}{27} : \frac{2}{3}$

$x = \frac{7}{27} \times \frac{3}{2}$

$x = \frac{7}{18}$

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Thứ ngày

b) $\left(x+\frac{5}{2}\right)^3=\frac{27}{8}$

$\left(x+\frac{5}{2}\right)^3=\frac{3^3}{2^3}$

TH1: $x+\frac{5}{2}=\frac{3}{2}$

$x=\frac{3}{2}-\frac{5}{2}$

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

TH2: $x+\frac{5}{2}=\frac{-3}{2}$

$x=\frac{-3}{2}-\frac{5}{2}$

$x=\frac{-8}{2}=-4$ vậy $x\in\{-1;-4\}$

c) $(2x-1)^2-\frac{1}{4}=2$

$(2x-1)^2=2+\frac{1}{4}$

$(2x-1)^2=\frac{9}{4}$

$(2x-1)^2=\frac{3^2}{2^2}$

TH1: $2x-1=\frac{3}{2}$

$2x=\frac{3}{2}+1$

$2x=\frac{5}{2}$

$x=\frac{5}{2}:2\Rightarrow x=\frac{5}{4}$ vậy

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TH2: $2x-1=\frac{-3}{2}$

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

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

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

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

$x=\frac{-1}{4}$ vậy $x\in\{\frac{5}{4};\frac{-1}{4}\}$

d) $\frac{x-1}{x+5}=\frac{6}{7}$

$(x-1).7=(x+5).6$

$x.7-1.7=x.6+5.6$

$x7-7=x.6+30$

$x7-x6=7+30$

$1x=30-7=x7+x6$

$23=x13$

$x=\frac{23}{13}$ vậy $x=\frac{23}{13}$

e) ~~$\frac{x+4}{=12}$~~ e) $\frac{(x+4)^2}{=12}=\frac{-3}{x+x4}$

$(x+4)^2=-12.3$

$(x+4)^2=36$

$(x+4)^2=6^2$ ~~$=-6^2$~~ *

TH1: $x+4=6$

$x=6-4$

$x=2$

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TH2: $x + 4 = -6$

$x = -6 + 4$

$x = -2$ Vậy $x \in \{2; -2\}$

Bài 3:

a) $\frac{x}{7} = \frac{y}{3}$ và $3x - 2y = 120$

$\frac{3x}{7 \cdot 3} = \frac{y \cdot 3}{3 \cdot 2} \Rightarrow \frac{3x}{21} = \frac{y3}{6} = \frac{120}{15} = \frac{40}{5} = 8$

$\begin{cases} \frac{x}{7} = 8 \Rightarrow x = 56 \\ \frac{y}{3} = 8 \Rightarrow y = 24 \end{cases}$

b) $\frac{x}{8} = \frac{y}{-7} = \frac{z}{12}$ và $-3x + 10y - 2z = 236$

$\frac{-3x}{-24} = \frac{10y}{-70} = \frac{2z}{24} \Rightarrow \frac{-3x}{-24} + \frac{10y}{-70} - \frac{2z}{24} = \frac{236}{-118} = -2$

$\begin{cases} \frac{x}{8} = -2 \Rightarrow x = -16 \\ \frac{y}{-7} = -2 \Rightarrow y = -14 \end{cases}$

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Thứ ngày

f) $3^x + 5 \cdot 3^{x-1} = 648$

$3^x \cdot (1 + 5 \cdot \frac{1}{3}) = 648$

$3^x \cdot \frac{8}{3} = 648$

$3^x = \frac{648}{8} \times 3 \Rightarrow 3^x = 81 \times 3$

$3^x = 3^3 \cdot 3 = 3^4$

$3^x = 3^4$

$\Rightarrow x = 4$

Vậy $x = 4$

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c) $\frac{x}{2} = \frac{y}{3}$; $\frac{y}{4} = \frac{z}{5}$ và $x - y - z = 38$

$\frac{x}{2} = \frac{y}{3} = \frac{42}{15}$ suy ra $\frac{8x}{8} = \frac{4y}{12} = \frac{42}{15} = \frac{152}{8 - 12 - 15}$

$\frac{152}{19}$

$\begin{cases} \frac{x}{2} = \frac{152}{19} \Rightarrow x = \frac{304}{19} \\ \frac{y}{3} = \frac{152}{19} \Rightarrow x = \frac{456}{19} \\ \frac{42}{15} = \frac{152}{19} \Rightarrow 2x = \frac{570}{19} \end{cases}$

d) $\frac{x}{5} = \frac{y}{2}$ và $x \cdot y = 24$

$\frac{x \cdot y}{3 \cdot 2} = \frac{24}{6} = 4$

$\begin{cases} \frac{x}{3} = 4 \Rightarrow x = 12 \\ \frac{y}{2} = 4 \Rightarrow x = 8 \end{cases}$

Bài 4:

giả

Thanh: $\frac{x}{13} = \frac{y}{14} = \frac{z}{15}$ và $x + y + z = 42$

$\frac{x + y + z}{13 + 14 + 15} = \frac{42}{42} = \frac{6}{21} = \frac{2}{7}$

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Thứ ngày

$$\begin{cases} \frac{x}{13} = \frac{2}{7} \Rightarrow x = \frac{26}{7} \\ \frac{y}{14} = \frac{2}{7} \Rightarrow x = 4 \\ \frac{z}{15} = \frac{2}{7} \Rightarrow z = \frac{30}{7} \end{cases}$$

Bài 5:

$$\frac{7a-4b}{3a+5b} = \frac{7c-4d}{3c+5d}$$

$$\frac{a}{b} = \frac{c}{d} \Rightarrow \frac{7a-4b}{7c-4d} = \frac{3a+5b}{3c+5d}$$

$$\Rightarrow \frac{7a-4b}{3a+5b} = \frac{7c-4d}{3c+5d}$$

Bài 6:

$A > B$

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