8-22-19 4th Try

$$\frac{3n+12}{6} = \frac{3n}{6} + \frac{12}{6}$$

$$\frac{n}{2} + 2$$

① $\frac{4n+10}{8} = \frac{2n+5}{4}$

② $\frac{6+\sqrt{8}}{2} = \frac{6+2\sqrt{2}}{2}$

$3+\sqrt{2}$

③ $\frac{8+\sqrt{20}}{6} = \frac{8+2\sqrt{5}}{6}$

20 → 4, 5 → 2, 2

$= \frac{4+\sqrt{5}}{3}$

④ $\frac{6 \pm \sqrt{-16}}{8} = \frac{6 \pm 4i}{8}$

$\sqrt{-16} = i\sqrt{(-1)(2\cdot2)(2\cdot2)}$

$2\cdot2i$

$4i$

$\frac{3 \pm 2i}{4}$

⑤ $\dfrac{\sqrt{24}+\sqrt{28}}{2} = \dfrac{2\sqrt{6}+2\sqrt{7}}{2}$

$\sqrt{6}+\sqrt{7}$

$2\sqrt{2\cdot 2\cdot 2\cdot 3}$

$2\sqrt{6}$

$2\sqrt{2\cdot 2\cdot 7}$

$2\sqrt{7}$

$\sqrt{6}+\sqrt{7}=\sqrt{13}$?

$\sqrt{4}+\sqrt{9}=\sqrt{13}$

$2+3=$

$5=\sqrt{13}$ X

No Addition

$\sqrt{4}\cdot\sqrt{9}=\sqrt{36}$?

$2\cdot 3=6$

$x\cdot x = x^2$ or $2\cdot x$

$7\cdot 7=7$ or $2\cdot 7$

Next Concept

$2n^3 \cdot 3n^2 =$

$2 \cdot n \cdot n \cdot n \cdot 3 \cdot n \cdot n = 6n^5$

① $\frac{4n^2}{6n} = \frac{\cancel{4}^{2} \, n \, n}{\cancel{6}_{3} \, n}$

$\frac{2n}{3}$

② $\frac{a^2 b^3 c}{a^3 b c^2} = \frac{a \cancel{a} \, bbb \, \cancel{c}}{aaa \, b \, \cancel{c} c}$

$\frac{b^2}{ac}$

③ $\frac{a^4}{y^3} \cdot \frac{y^6}{a^5} = \frac{aaaa \, yyyyyy}{yyy \, aaaaa}$

$\frac{y^3}{a}$

$n^{-3} = \frac{1}{n^3}$

$mg \cdot \ell^{-1} = \frac{mg}{\text{liter}}$

④ $a^4 \, a^{-2} \cdot b^2 \cdot b^{-3} = \frac{a^4 b^2}{a^2 b^3}$

$\frac{aaaa \, bb}{aa \, bbb}$

$\frac{a^2}{b}$

⑤ $\frac{a^{-3}b^2c}{ab^{-3}c^2} = \frac{b^3 b^2 c}{a^2 a c^2}$

$= \frac{bbb\ bb\ c}{aa\ a\ cc}$

$\frac{b^5}{a^3 c}$

⑥ $\frac{2^{-1}a^{-2}b}{3a^{-3}b^2} = \frac{a^3 b}{3 \cdot 2 a^2 b^2}$

$\frac{a\ a\ a\ b}{3 \cdot 2 \cdot a\ a\ b\ b}$

$\frac{a}{6b}$

x^{-1}

⑦ $\left(\frac{2a}{3y}\right)^{-1} = \frac{3y}{2a}$

⑧ $\left(\frac{2n^2}{3y}\right)^{-2}$

$\left(\frac{2n^2}{3y}\right)^{-1 \cdot 2}$

$\left(\frac{3y}{2n^2}\right)^2 = \frac{3y}{2n^2} \cdot \frac{3y}{2n^2} = \frac{9y^2}{4n^4}$

⑨ $\left(\frac{5a^3}{2y^2}\right)^{-2}$

$\left(\frac{5a^3}{2y^2}\right)^{-1 \cdot 2}$

$\left(\frac{2y^2}{5a^3}\right)^2 = \frac{2y^2}{5a^3} \cdot \frac{2y^2}{5a^3}$

$\frac{2yy\ \ 2yy}{5aaa\ 5aaa}$

$\frac{4y^4}{25a^6}$