2-21-14

Quiz 9 - Hints

#8 $5^{-8} \cdot 5^{4} = ?$

WANT positive exponents!

Example: $2^{-91} \cdot 2^{87} = 2^{-91+87} = 2^{-4} = \frac{1}{2^4} = \frac{1}{16}$ *

use rule $x^{-n} = \frac{1}{x^n}$

↑ can be further simplified

* $2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 4 \cdot 4 = 16$

Quiz 9 hints

#4

$(-2x^2 - 4xy + 15y) - (20x^2 - 14xy^2 - 14y)$

"deal breaker"

step 1 | distribute the −

step 2 | combine

example $(51x^2 - 5xy + 10y) - (68x^2 - 14xy^2 - 14y)$

$51x^2 - 5xy + 10y - 68x^2 + 14xy^2 + 14y$

step 1 }
step 2 }

$-17x^2 - 5xy + 24y + 14xy^2$

7-2 (3)

Quiz 9 hints

#5

$x+5 \overline{) x^2+2x-15}$

example

$x - 2 \quad R(-8)$

$x+4 \overline{) x^2+2x-16}$

$-(x^2+4x)$

$-2x-16$

$-[-2x-8]$ *

-8

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

$x \cdot (x+4) = x^2+4x$

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

$-2 \cdot (x+4) = -2x-8$

BEST FORM:

$x-2+\left[\frac{-8}{x+4}\right]$

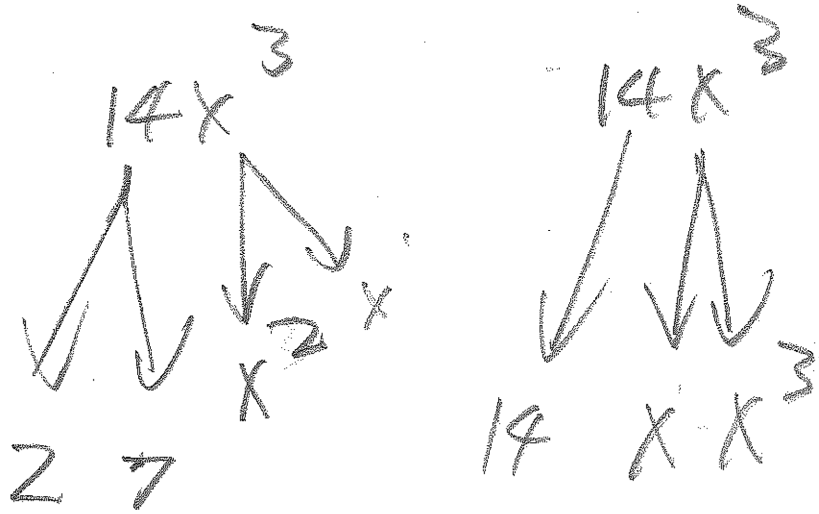
* $= x-2-\frac{8}{x+4}$

$-2x-16-[-2x-8] = -2x-16+2x+8=-8$

Supplements

Sec 5.1 (9)

Find 3 factorizations



another factorization:

$14 \cdot x \cdot x \cdot x$

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(37) $n(n-6)+3(n-6)$

$= n \cdot \underline{(n-6)} + 3 \cdot \underline{(n-6)}$

$= \underline{(n-6)} \cdot (n+3) = (n-6)(n+3)$

5.1

(5

(43) $x^3 + 2x^2 + 5x + 10$

$(x^3 + 2x^2) + (5x + 10)$ ← step

$x^2 \cdot (x+2) + 5 \cdot (x+2)$ ← factor

$\frac{x^3}{x^2} = x$ ①

$\frac{2x^2}{x^2} = 2$ ②

GCF $= x^2$

$\frac{5x}{5} = x$ ①

$\frac{10}{5} = 2$ ②

GCF $= 5$

$x^2 \cdot (x+2) + 5 \cdot (x+2)$

$(x+2) \cdot [x^2 + 5] = (x+2)(x^2+5)$

E-2

(32.) $-2x - 99 + x^2$

MNT: RECORDER ⇒

$x^2 - 2x - 99$

neg

$(x+A)\cdot(x-B)$

$A \cdot B = 99$

$A - B = -2$

$A = 9$

$B = 11$

$(x+9)\cdot(x-11)$ = ANSWER

sec 5.2

(55.) $p^2 - 7pq + 10q^2$

neg pos

$(p - Aq)(p - Bq)$

Let $p = x$ and $q = y$:

$\Rightarrow x^2 - 7xy + 10y^2$

$= (x - Ay)(x - By)$

$= (x - 5y)(x - 2y)$

$A \cdot B = 10$

$A = 5$

$B = 2$

$-A - B = -7$

$\Rightarrow \boxed{A + B = 7}$

sec. 5.2

(61.) $6a^{10} + 30a^9 - 84a^8$

$a^8 \cdot (6a^2 + 30a - 84)$

$2 \cdot a^8 (3a^2 + 15a - 42)$

$2 \cdot 3 \cdot a^8 (a^2 + 5a - 14)$

$6a^8 \cdot (a^2 + 5a - 14)$

$6a^8 \cdot (a + A) \cdot (a - B)$

$A \cdot B = 14$

$A - B = 5$

$A = 7$

$B = 2$

ANSWER $= 6a^8 \cdot (a + 7)(a - 2)$