Algebra 2 | Weds. 3-20-13 | Class Notes

Homework Review – Pg 324 #1-17 odd

③ $$\frac{6x^2+13x-5}{6x^2-23x+7}$$

$6x^2+13x-5$

sum = 13

prod = −30

−2 +15

$(6x^2-2x)+(15x-5)$

$2x(3x-1)+5(3x-1)$

$(3x-1)(2x+5)$

TOP

$6x^2-23x+7$

sum = −23

prod = 42

−2 −21

$(6x^2-2x)+(-21x+7)$

$2x(3x-1)+-7(3x-1)$

$(3x-1)(2x-7)$

BOTTOM

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

$x \neq \frac{1}{3}, \frac{7}{2}$

(5) $\dfrac{-x-4}{1x^2-x-20}$

sum $\Rightarrow -1$

prod $\Rightarrow -20$

$1 \quad 1$

$+4 \quad -5$

$\dfrac{-x-4}{(x+4)(x-5)}$

$x \neq -4, 5$

$\dfrac{-1(x+4)}{(x+4)(x-5)} = \boxed{\dfrac{-1}{(x-5)}}$

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(7) $\dfrac{6x^3+6x}{x^2+1} = \dfrac{6x(x^2+1)}{(x^2+1)} = \boxed{6x}$

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(9) $\dfrac{x-2}{x-3} \cdot \dfrac{2x-6}{x+5} = \dfrac{x-2}{x-3} \cdot \dfrac{2(x-3)}{x+5}$

$= \boxed{\dfrac{(x-2)\,2}{x+5}}$

(11) $\dfrac{x^5y^4}{3xy} \div \dfrac{1}{x^3y}$

$\dfrac{x^5y^4}{3xy} \cdot \dfrac{x^3y}{1} = \dfrac{x^8y^5}{3x^1y}$

$= \boxed{\dfrac{x^7y^4}{3}}$

(13) $\dfrac{x^2-25}{2x^2+5x-12} \div \dfrac{x^2-3x-10}{x^2+9x+20}$

sum = −3
prod = −10
−5, +2

sum ⇒ 9
prod ⇒ 20
+4, +5

$\dfrac{(x-5)(x+5)}{2x^2+5x-12} \cdot \dfrac{(x+4)(x+5)}{(x+2)(x-5)}$

(CONT)

(13) (CONT)

$$\frac{x+5}{2x^2+5x-12} \cdot \frac{(x+4)(x+5)}{(x+2)}$$

Sum $\Rightarrow 5$

prod $= -24$

$-3, +8$

$(2x^2-3x)+(8x-12)$

$x(2x-3)+4(2x-3)$

$$\frac{x+5}{(2x-3)\cancel{(x+4)}} \cdot \frac{\cancel{(x+4)}(x+5)}{x+2}$$

$$\frac{(x+5)^2}{(2x-3)(x+2)}$$

(15) $\dfrac{16x^2-9}{4x+3} = -6$

$\dfrac{(4x-3)\cancel{(4x+3)}}{\cancel{4x+3}} = -6$

$4x-3 = -6$

$4x = -3$

$\boxed{x = -\frac{3}{4}}$

CK $\dfrac{16\left(-\frac{3}{4}\right)^2-9}{4\left(-\frac{3}{4}\right)+3} = -6$ (numerator $\to 0$, denominator $\to 0$)

$\therefore$ NO SOLUTION

(17) $\dfrac{x^2-4}{x-2} = 1$

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

$x+2 = 1$

$x = -1$

$\dfrac{(-1)^2-4}{-1-3} \stackrel{?}{=} 1$

$\dfrac{-3}{-3} = 1$ ✓