Practice – Test 1

5. $(x^4y^5)^{-1/4} = \dfrac{1}{(x^4y^5)^{1/4}}$

$\dfrac{1}{xy^{5/4}}$

$\frac{4}{1}\cdot\frac{1}{4}=1 \qquad \frac{5}{1}\cdot\frac{1}{4}=\frac{5}{4}$

4. $\left(\dfrac{-9s^7t^{-2}}{9s^5t}\right)^{-2} =$

$\left(\dfrac{-1s^2}{t^3}\right)^{-2}$

$\left(\dfrac{-1t^3}{s^2}\right)^{2}$

$\dfrac{t^6}{s^4}$

$(-1s^2t^{-3})^{-2}$

$(-1)^{-2}s^{-4}t^{6}$

$\dfrac{t^6}{s^4}$

11. $g(a+h)$ $\qquad g(x) = -x^2 - 4x + 7$

$$g(a+h) = -(a+h)^2 - 4(a+h) + 7$$

$$= -(a^2 + 2ah + h^2) - 4a - 4h + 7$$

$$= -a^2 - 2ah - h^2 - 4a - 4h + 7$$

15. $\left(\frac{3t^3}{-4u^6}\right)\left(\frac{-3u^3}{t^6}\right) = +\frac{9}{4t^3u^3}$

19. $3v^3 + 3 = 3(v^3+1)$

$$= 3(v+1)(v^2 - v + 1)$$

21. $-20q^3 - 57q^2 - 40q$

$-q(20q^2 + 57q + 40)$

$-q[20q^2 + 32q + 25q + 40]$

$-q[4q(5q+8) + 5(5q+8)]$

$-q(4q+5)(5q+8)$

800

1, 800

⋮

20, 40

32, 25

35,

22.

$$\frac{\frac{3y}{xy}+\frac{3x}{yx}}{\frac{x2}{xy^2}-\frac{4y^2}{xy^2}}$$

$$\frac{\frac{3y+3x}{xy}}{\frac{2x-4y^2}{xy^2}}$$

$$\frac{3x+3y}{xy}\cdot\frac{xy^2}{2x-4y^2}=\frac{y(3x+3y)}{2x-4y^2}$$

24. $$\frac{\dfrac{6a}{a^2-b^2}+\dfrac{b}{a+b}}{\dfrac{3}{a-b}}$$

$$\frac{\dfrac{6a}{(a+b)(a-b)}+\dfrac{b(a-b)}{(a+b)(a-b)}}{\dfrac{3}{a-b}}=\frac{\dfrac{6a+b(a-b)}{(a+b)(a-b)}}{\dfrac{3}{a-b}}$$

$$\frac{6a+ab-b^2}{(a+b)(a-b)}\cdot\frac{a-b}{3}=\frac{6a+ab-b^2}{3(a+b)}$$

35. $f(x) = \frac{5}{x^2-16}$

$x^2 - 16 \neq 0$

$x^2 \neq 16$

$x = 4, -4$

dom(x): $x \neq 4, -4$

ran(y): $y \neq 0$

33. $g(s) = 7s + 9$

$g(-.4) = 7(-.4) + 9$

$= -2.8 + 9$

$= 6.2$

29. $\frac{1}{2} + \frac{x}{7} = \frac{9}{14}$ $14x$

$\frac{(7x)1}{(7x)2} + \frac{x(2x)}{7(2x)} = \frac{9x}{14x}$

$\frac{14x}{1}\left[\frac{7x}{14x} + \frac{2x^2}{14x}\right] = \left[\frac{9x}{14x}\right]\frac{14x}{1}$

$7x + 2x^2 = 9x$

$2x^2 - 2x = 0$

$2x(x-1) = 0$

$2x = 0$ | $x - 1 = 0$

$x = 0$ | $x = 1$

9. $(-8x-3)^2 = (-8x-3)(-8x-3)$

$64x^2 + 24x + 24x + 9$

$64x^2 + 48x + 9$