

October 24, 2016

5.2  
#57)  $f(x) = 3x^4 - 5x^2 - 3$

$$f(3) = 3(3)^4 - 5(3)^2 - 3$$

$$= 3(81) - 5(9) - 3$$

$$= 243 - 45 - 3$$

$$= 198 - 3$$

$$= \boxed{195}$$

Oct 24-9:04 AM

5.4  
#36)

	$x$	$7$
$7$	$7x$	$7 \cdot 7$
$x$	$x \cdot x$	$7x$

$$7x + 7x + 49 + x^2$$

$$\boxed{x^2 + 14x + 49}$$

Oct 24-9:09 AM

5.4  
#15)

$$(-m^3 - 4m^2w + 7w^3) - (m^2w + 6w^2 + 3w^3)$$

$$-m^3 - 4m^2w + 7w^3 - m^2w - 6w^2 - 3w^3$$

$$\boxed{-m^3 - 5m^2w - 6w^2 + 4w^3}$$

Oct 24-9:14 AM

Meaning of an Exponent

$$a^n = \underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_n$$

$n$  factors of  $a$

Oct 24-9:24 AM

- Laws of Exponents
- ①  $a^m \cdot a^n = a^{m+n}$
  - ②  $(a^m)^n = a^{mn}$
  - ③  $\frac{a^m}{a^n} = a^{m-n}$
  - ④  $\frac{a^{-n}}{1} = \frac{1}{a^n}$
  - ⑤  $\frac{1}{a^{-n}} = a^n$
  - ⑥  $a^0 = 1$

Oct 24-9:18 AM

$$\underbrace{(3x^2y^3)}_{\text{base}}^3 = (3)^3 \cdot (x^2)^3 \cdot (y^3)^3$$

$$= 27x^6y^9$$

$$= (3x^2y^3)(3x^2y^3)(3x^2y^3)$$

$$= 3x^2y^3 \cdot 3x^2y^3 \cdot 3x^2y^3$$

$$= 3 \cdot 3 \cdot 3 \cdot x^2 \cdot x^2 \cdot x^2 \cdot y^3 \cdot y^3 \cdot y^3$$

$$= 27 \cdot x^6 \cdot y^9$$

$$= \boxed{27x^6y^9}$$

Oct 24-9:25 AM

$$\frac{x^{-6} y^{-4} z^4}{x^{-3} y^8 z^{-4}}$$

$$\frac{x^3}{x^6} \cdot \frac{z^4 z^4}{y^8 y^4}$$

$$\frac{x^{5-6=-1}}{y^{12}} \cdot z^8$$

$$\frac{z^8}{x y^{12}}$$

Oct 24-9:30 AM

$$\left( \frac{x^2 y^3}{z^4} \right)^{-2} = \frac{(x^2)^{-2} \cdot (y^3)^{-2}}{(z^4)^{-2}}$$

↑  
Base

$$= \frac{(z^4)^2}{(x^2)^2 \cdot (y^3)^2}$$

$$= \frac{z^8}{x^4 y^6}$$

Oct 24-9:35 AM

$$(4x^2 y^{-3})^{-2}$$

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

$$= \frac{1}{4^2} \cdot \frac{1}{(x^2)^2} \cdot \frac{y^6}{1}$$

$$= \frac{y^6}{16 x^4}$$

Oct 24-9:40 AM

$$(x^4 y^{-3})^2 \cdot (x^2)^0$$

$$x^8 \cdot y^{-6} \cdot 1$$

$$\frac{x^8}{y^6}$$

Oct 24-9:46 AM

Do 5.5 for Tomorrow

Oct 24-9:51 AM