

WEDNESDAY START 7:30

THURSDAY START REGULAR CLASS TIME.

> CHOOSE EITHER TEST

NEED THE FOLLOWING FOR THE TEST:

- (1). SCANTRON
- (2). CALCULATOR
- (3). NOTES

WEBASSIGN - P. 2 #16

$$\frac{5^{-\frac{1}{2}} \cdot 5x^{\frac{5}{2}}}{(5x)^{\frac{3}{2}}}, \quad x > 0$$

$$= \frac{5^{-\frac{1}{2}} x^{\frac{5}{2}}}{5^{\frac{3}{2}} (5x)^{\frac{3}{2}}}$$

← flip the negative exponent.

$$= \frac{5^{(1-\frac{1}{2})} x^{\frac{5}{2}}}{5^{1+\frac{3}{2}} \cdot x^{1+\frac{3}{2}}}$$

← subtract exponent on the same base.

← power to a power in parenthesis.

$$= \frac{5^{\frac{1}{2}} x^{\frac{5}{2}}}{5^{\frac{5}{2}} x^{\frac{5}{2}}}$$

$$= \frac{x^{\frac{5}{2}-\frac{5}{2}}}{5^{\frac{5}{2}-\frac{1}{2}}} = \boxed{\frac{x}{5}}$$

← subtract exponent, small from large

★ in webassign, $\sqrt{b^2} = |b|$, find "101" in FUNCTION Tab.

P. 2 #06

$$\left(\frac{2}{y}\right)^3 \left(\frac{3}{y}\right)^4$$

$$= \frac{2^3}{y^3} \cdot \frac{3^4}{y^4}$$

$$= \frac{8 \cdot 81}{y^{3+4}}$$

$$= \boxed{\frac{648}{y^7}}$$

← power to a power, multiply exponents inside & outside

★ every time you have parenthesis raised to a power, you got power to a power, so just multiply the exponents. Remember if the exponent is invisible, it's understood 1

P.2-#2

$$\frac{16}{\sqrt{5} + \sqrt{6}}$$

$$= \frac{16}{\sqrt{5} + \sqrt{6}} \cdot \left(\frac{\sqrt{5} - \sqrt{6}}{\sqrt{5} - \sqrt{6}} \right)$$

← multiply by the conjugate of denominator.

$$= \frac{16(\sqrt{5} - \sqrt{6})}{(\sqrt{5} + \sqrt{6})(\sqrt{5} - \sqrt{6})}$$

F.O.I.L.

$$\left(\sqrt{5} + \sqrt{6} \right) \left(\sqrt{5} - \sqrt{6} \right) = (\sqrt{5})(\sqrt{5}) + (\sqrt{6} \cdot \sqrt{5}) - (\sqrt{6}\sqrt{5}) - \sqrt{6}\sqrt{6}$$

$$= 5 - 6$$

$$= \frac{16\sqrt{5} - 16\sqrt{6}}{(\sqrt{5})^2 - (\sqrt{6})^2}$$

$$= \frac{16\sqrt{5} - 16\sqrt{6}}{5 - 6} = \boxed{-16\sqrt{5} + 16\sqrt{6}}$$

REVIEW - TEST #1

⚡ VERY LIKELY TO SEE SIMILAR PROBLEMS FOR TEST

$$(1) (-3)^4 = 81$$

→ negative to a 4th power is positive.

$$(2) -3^4 = -81$$

$$(3) 7^{-1} - 9^{-1} = \frac{1}{7} - \frac{1}{9} = \frac{1 \cdot 9 - 1 \cdot 7}{7 \cdot 9} = \frac{2}{63}$$

HANDY-DANDY METHOD

$$(4) \left(\frac{3}{5} \right)^{-2} = \left(\frac{5}{3} \right)^2 = \frac{5^2}{3^2} = \frac{25}{9}$$

↑

a number to the negative power is equal to the reciprocal of that number and raised to the positive power.

(5) To 2 decimal places:

$$(4.1795)^3 = 73.0084265 \approx \boxed{73.01}$$

$$(6) (3a^3)^2 = 3^2 \cdot a^{(3 \cdot 2)} = \boxed{9a^6}$$

$$(7) (4x^2y^{-3})(3x^5y^2) = 4 \cdot 3 \cdot x^{(2+5)} \cdot y^{(-3+2)} = 12x^7y^{-1} = \boxed{\frac{12x^7}{y}}$$

(8) $5 - \sqrt{3}$ conjugate is $5 + \sqrt{3}$.

product of the 2 conjugates is 22.

$$(5 - \sqrt{3})(5 + \sqrt{3}) = 25 - 3 = 22$$

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