~~34~~ (without exponent monster)

Algebra 2 ~ Assignment 23

FINISH EXPONENT MONSTER!

NEW (packet)

1. $\left(\frac{1}{32}\right)^{-3/5} = (32)^{3/5} = \left(\sqrt[5]{32}\right)^3 = 2^3 = \boxed{8}$

2. $\left(\frac{4}{9}\right)^{-1/2} = \left(\frac{9}{4}\right)^{1/2} = \sqrt{\frac{9}{4}} = \boxed{\frac{3}{2}}$

3. $\left(\frac{-27}{8}\right)^{2/3} = \left(\sqrt[3]{\frac{-27}{8}}\right)^2 = \left(\frac{-3}{2}\right)^2 = \boxed{\frac{9}{4}}$

4. $x^{1/3}x^{3/4} = x^{4/12}x^{9/12} = \boxed{x^{13/12}}$

5. $(m^{-2/3})^{-1/6} = m^{2/18} = \boxed{m^{1/9}}$

6. $\left(\frac{m^{-2}n^{-6}}{121}\right)^{-\frac{1}{2}} = \left(\frac{1}{121m^2n^6}\right)^{-\frac{1}{2}} = (121m^2n^6)^{1/2} = \sqrt{121m^2n^6} = \boxed{11mn^3}$

7. $(8x^6)^{-2/3} = \left(\frac{1}{8x^6}\right)^{2/3} = \left(\sqrt[3]{\frac{1}{8x^6}}\right)^2 = \left(\frac{1}{2x^2}\right)^2 = \boxed{\frac{1}{4x^4}}$

8. $(a^{2/5})^{-3/4} = a^{-6/20} = a^{-3/10} = \boxed{\frac{1}{a^{3/10}}}$

9. $x^{\frac{3}{2}}y^{\frac{7}{3}}z^{\frac{9}{6}} = x^{\frac{9}{6}}y^{\frac{14}{6}}z^{\frac{9}{6}} = \sqrt[6]{x^9y^{14}z^9} = \boxed{xy^2z\sqrt[6]{x^3y^2z^3}}$

10. $\left(y^{\frac{3}{4}}\right)^{\frac{2}{3}} = y^{\frac{6}{12}} = y^{\frac{1}{2}} = \boxed{\sqrt{y}}$

11. $11^{1/3}a^{7/3}b^{2/3} = \sqrt[3]{11a^7b^2} = \boxed{a^2\sqrt[3]{11ab^2}}$

12. $m^{2/5}m^{3/4} = m^{8/20}m^{15/20} = m^{23/20} = \sqrt[20]{m^{23}} = \boxed{m\sqrt[20]{m^3}}$

13. $a^{2/3}g^{1/4}e^{1/2} = a^{8/12}g^{3/12}e^{6/12} = \boxed{\sqrt[12]{a^8g^3e^6}}$

→

$\boxed{\text{REVIEW}}$ (No Calculators)

14. $|m-3| - 16 = -11$

$\qquad\quad +16 \quad +16$

$|m-3| = 5$

$m-3=5 \qquad m-3=-5$

$\ \ +3\ +3 \qquad\ \ +3\ \ +3$

$\boxed{m=8,\ m=-2}$

15. Equation of line passing through (1,2) and (3,-4)

$m = \frac{-4-2}{3-1} = \frac{-6}{2} = -3$

$2 = 1(-3) + b$

$+3 \quad +3$

$5 = b$

$\boxed{y=-3x+5}$

16. Simplify: $\frac{x x^2 (x^{-2})^{-2} (mpx^2)^{-4}}{(x^0)^2 (x^2)^0 (x^2 m p^{-2})^3} = \frac{x^3 x^4 m^{-4} p^{-4} x^{-8}}{\underset{1}{\cancel{x^0}}\ \underset{1}{\cancel{x^0}}\ x^6 m^3 p^{-6}}$

$= \frac{x^{-1} m^{-4} p^{-4}}{x^6 m^3 p^{-6}} = x^{-1-6} m^{-4-3} p^{-4+6} = x^{-7} m^{-7} p^2 = \boxed{\frac{p^2}{x^7 m^7}}$

17. $(w^2-5)(2w^2+3) = 2w^4 + 3w^2 - 10w^2 - 15 = \boxed{2w^4 - 7w^2 - 15}$

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38. Factor $200x^2 - 50 = 50(4x^2-1) = \boxed{50(2x+1)(2x-1)}$

39. Factor $\underbrace{10a^3 - 20a^2}\ \underbrace{-2a+4} = 10a^2(a-2) - 2(a-2)$

$= (10a^2-2)(a-2) = \boxed{2(5a^2-1)(a-2)}$

40. Factor $\underbrace{5w^3 - 20w^2}\ \underbrace{+3w-12} = 5w^2(w-4) + 3(w-4)$

$= \boxed{(5w^2+3)(w-4)}$

43. $\pm\sqrt{256} = \boxed{\pm 16}$

44. $\sqrt[3]{-216} = \boxed{-6}$

46. $\sqrt[5]{c^5 d^{15}} = \boxed{cd^3}$

Alg2 ~ Asmt 23, continued

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50. $\sqrt{a^2-10a+25} = \sqrt{(a-5)(a-5)} = \boxed{a-5}$

☆ 51. $\sqrt[4]{64} = \sqrt[4]{8\cdot 8} = \sqrt[4]{2\cdot2\cdot2\cdot2\cdot2\cdot2} = \boxed{2\sqrt[4]{4}}$

52. $\sqrt{5}+\sqrt{20} = \sqrt{5}+\sqrt{4\cdot5} = \sqrt{5}+2\sqrt{5} = \boxed{3\sqrt{5}}$

53. $5\sqrt{12}-3\sqrt{75} = 5\sqrt{4\cdot3}-3\sqrt{25\cdot3} = 5\cdot2\sqrt{3}-3\cdot5\sqrt{3}$

$= 10\sqrt{3}-15\sqrt{3} = \boxed{-5\sqrt{3}}$

56. $\sqrt{8}\cdot\sqrt{15}\cdot\sqrt{21} = \sqrt{8\cdot15\cdot21} = \sqrt{4\cdot2\cdot5\cdot3\cdot3\cdot7} = 2\cdot3\sqrt{2\cdot5\cdot7}$

$= \boxed{6\sqrt{70}}$

57. $\frac{1}{(3+\sqrt{5})}\cdot\frac{(3-\sqrt{5})}{(3-\sqrt{5})} = \frac{3-\sqrt{5}}{9-5} = \boxed{\frac{3-\sqrt{5}}{4}}$

58. $\frac{\sqrt{10}}{(4+\sqrt{2})}\cdot\frac{(4-\sqrt{2})}{(4-\sqrt{2})} = \frac{4\sqrt{10}-\sqrt{20}}{16-2} = \frac{4\sqrt{10}-2\sqrt{5}}{14} = \frac{\cancel{2}(2\sqrt{10}-\sqrt{5})}{\cancel{2}(7)}$

$= \boxed{\frac{2\sqrt{10}-\sqrt{5}}{7}}$

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8. Factor: $x^2-14x+45 = \boxed{(x-9)(x-5)}$

9. Factor: $2r^2+3pr-2p^2 = \boxed{(2r-p)(r+2p)}$

11. $\sqrt{175} = \sqrt{25\cdot7} = \boxed{5\sqrt{7}}$

12. $(5+\sqrt{3})(7-2\sqrt{3}) = 35-10\sqrt{3}+7\sqrt{3}-2\sqrt{9}$

$= 35-3\sqrt{3}-2(3) = 35-3\sqrt{3}-6 = \boxed{29-3\sqrt{3}}$