MATH 150 Pre-Calculus, Week In Review

Fall, 2014, Problem Set 3 (1A-2B)

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1. Fully simplify

$$\sqrt[5]{\frac{32\sqrt[3]{z^6}}{9z^6}}$$

2. Solve the equation $3x^2 - 4x - 15 = 0$ by Factoring, Completing the Square and Quadratic Formula.

3. Solve $S = 2\pi r^2 + 2\pi rh$ for h

4. Solve $|x^2 - x - 6| = 6$ for x

5. Divide $2x^4 - 3x^3 + 9$ by $x^2 + 6x$, identify the remainder.

6. Fully simplify $\dfrac{2}{\sqrt[5]{8(3-2x)}}$ and rationalize the denominator.

7. Fully simplify

$$\frac{\dfrac{x}{x-3}+2}{2-\dfrac{x}{x+3}}$$

8. Fully simplify and rewrite in fractional exponent form.

$$\sqrt{x\sqrt{x\sqrt[3]{x^4}}}$$

9. Fully simplify

$$-7^2+|2\pi-20|+30\div 5\cdot 2-|4-3i|$$

10. Fully factor $5x^3 - 10x^2 - 180x + 360$

11. Fully simplify

$$\frac{3 \cdot 10000^5 - 10^{23}}{\left(\frac{-1}{100}\right)^{-11} + 1000^7}$$

12. Solve $2\sqrt{x - 10} + 2x = 20$ for x

13. Fully simplify $\sqrt[3]{40x^4} - \sqrt{20x^3} + 5\sqrt[3]{320x^4}$

14. Fully simplify

$$\frac{-9(2x+2h+1)^{-1} + 9(2x+1)^{-1}}{h}$$

15. Solve the equation $x^{\frac{2}{3}} + 7x^{\frac{1}{3}} - 8 = 0$ for x

16. Fully simplify

$$|3i - 4| \left(\overline{\sqrt{-16} - 2}\right)$$

17. Solve $|3x + 2| - 3 \geq 1$ for x

18. Solve $\dfrac{1}{x - 6} \leq \dfrac{x + 4}{2x - 28}$