Math 1215 HW – 10 Name..... Solutions

SOLVE :

1. $\sqrt{2x-5}=7$

$(\sqrt{2x-5})^2 = 7^2$

$2x-5=49$

$+5 \quad +5$

$2x = 54 \Rightarrow x = \frac{54}{2}$

$\boxed{x=27}$

2. $\sqrt[3]{3x-1}=-2$

$(\sqrt[3]{3x-1})^3 = (-2)^3$

$3x-1 = -8$

$+1 \quad +1$

$3x = -7$

$\boxed{x = -\frac{7}{3}}$

3. $\sqrt{2x-5}-2=3$

$+2 \quad +2$

$\sqrt{2x-5}=5$

$(\sqrt{2x-5})^2 = 5^2 \Rightarrow 2x-5=25$

$+5 \quad +5$

$2x = 30 \Rightarrow x = \frac{30}{2} = 15$

4. $4\sqrt{2x} = 12$

$\frac{}{4} \quad \frac{}{4}$

$\sqrt{2x} = 3$

$2x = 3^2 \Rightarrow 2x = 9$

$\boxed{x = \frac{9}{2}}$

Simplify :

$a, b, x, y > 0$

5. $\sqrt{a^6 b^{10}}$

$= a^3 b^5$

6. $\sqrt{49a^4 b^{12}}$

$= 7a^2 b^6$

7. $\sqrt{121x^{14}y^6}$

$= 11 x^7 y^3$

8. $\sqrt{12} - 2\sqrt{3} + \sqrt{75}$

$= \sqrt{3 \cdot 4} - 2\sqrt{3} + \sqrt{25 \cdot 3}$

$= 2\sqrt{3} - 2\sqrt{3} + 5\sqrt{3}$

$= \boxed{5\sqrt{3}}$

9. $8\sqrt{5} - \sqrt{45} - \sqrt{80}$

$= 8\sqrt{5} - \sqrt{9 \cdot 5} - \sqrt{16 \cdot 5}$

$= 8\sqrt{5} - 3\sqrt{5} - 4\sqrt{5}$

$= \boxed{\sqrt{5}}$

10. $\sqrt{\frac{y^8}{x^{12}}} = \boxed{\frac{y^4}{x^6}}$

11. $\frac{\sqrt[3]{250x^5y^7}}{\sqrt[3]{2x^2y}}$

$= \sqrt[3]{\frac{250 x^5 y^7}{2x^2 y}} = \sqrt[3]{125 x^3 y^6}$

$= \boxed{5 x y^2}$