Intermediate Algebra	Name:
Study Guide 12	Class:
Due Date:	Score:

No Work ⇔ No Points

Use Pencil Only ⇔ Be Neat & Organized

1. **(2 points) Simplify** $\sqrt{45x^5}$.

1. _____

2. **(2 points) Simplify** $\sqrt[3]{54x^5y^{10}}$.

2. _____

3. **(3 points) Simplify** $\sqrt[3]{-128x^5y^4z^3}$.

3. _____

4. **(3 points) Simplify** $\sqrt[4]{32x^5y^{11}z^{10}}$.

4. _____

5. (4 points) Solve: $\sqrt[3]{2x-3} + 5 = 4$

5. _____

6. (4 points) Solve: $x - \sqrt[3]{4x^2 + 5x} = 0$

6. _____

7. (4 points) Solve: $2x - \sqrt{3x^2 - 4x - 4} = 0$

7. _____

8. (4 points) Solve: $\sqrt{5x - 13} - \sqrt{x + 3} = 0$

8. _____

9. (3 points) Simplify $\sqrt[3]{x^2} \bullet \sqrt[6]{x}$ **. Final answer in one single radical.**

9. _____

10. (3 points) Simplify $\dfrac{\sqrt[4]{x}}{\sqrt[5]{x}}$ **. Final answer in one single radical.**

10. _____

11. (3 points) Distribute and simplify: $2\sqrt{5}\left(3\sqrt{10} - \sqrt{5}\right)$

11. _____

12. (3 points) Foil and simplify: $\left(3\sqrt{x} + 5\right)\left(2\sqrt{x} - 7\right)$

12. _____

13. (3 points) Simplify: $2\sqrt{75x^3} - x\sqrt{300x}$

13. _____

14. (3 points) Simplify: $\left(\sqrt{13} - 2\sqrt{3}\right)\left(\sqrt{13} + 2\sqrt{3}\right)$

14. _____

15. (3 points) Simplify: $\left(2\sqrt{3} - 3\sqrt{2}\right)^2$

15. _____

16. (3 points) Find the domain of the function $f(x) = 2 - \sqrt{-9 - 4x}$**, and express your answer in interval notation.**

16. _____