Worksheet #3 – Exponents

College Placement Exam Prep

Correct Number of Answers on Placement Exam Pre-Test for Questions 24 – 30: \_\_\_\_\_\_\_\_

Directions: Complete the appropriate section of the worksheet. Show all work!

* If you answered 0, 1, or 2 questions correct, complete the problems in Section A of the worksheet.
* If you answered 3, 4, or 5 questions correct, complete the problems in Section B of the worksheet.
* If you answered 6 or 7 questions correct, complete the problems in Section C of the worksheet.

**Section A**

*Simplify each expression.*

1. $\sqrt[3]{8x^{3}}$ 2. $\sqrt[3]{\frac{8x^{3}}{27}}$ 3. $\left(4f^{5}g\right)^{2}(2fg^{3})$

4. $\sqrt{\frac{36}{16}}$ 5. $x^{2}∙x^{3}$ 6. $\sqrt[3]{x^{8}}$

*Evaluate.*

7. If $f\left(x\right)=-2^{x-1}$, then $f\left(6\right)=\\_\\_\\_\\_\\_\\_\\_$.

*Solve.*

8. $2\sqrt{x+2}=4$ 9. $\sqrt{x+3}=x-3$ 10. $(x+1)^{\frac{1}{3}}=3$

**Section B**

*Simplify each expression.*

1. $64^{-\frac{1}{3}}$ 2.$\sqrt[3]{-27x^{6}}$ 3. $x^{6}∙x^{2}∙x^{-1}$

4. $\sqrt[3]{125x^{7}}$ 5. $\sqrt[3]{\frac{64x^{3}}{27}}$ 6. $(-4a^{4}b^{7})^{2}$

*Evaluate.*

7. If $f\left(x\right)=-2^{x-1}$, then $f\left(4\right)=\\_\\_\\_\\_\\_\\_\\_$.

*Solve.*

8. $\sqrt{2x+5}=\sqrt{3x-1}$ 9. $\sqrt{-14x+2}=x-3$ 10. $(x+4)^{\frac{1}{2}}=6$

**Section C**

*Simplify each expression.*

1. $(a^{4}b^{8})^{-\frac{1}{4}}$ 2. $\sqrt[3]{\frac{x^{3}}{125}}$ 3. $6m^{4}n^{9}(-3m^{2}n^{3})^{-2}$

4. $\sqrt{49}∙\sqrt[3]{8x^{6}}$ 5. $(3x)^{2}∙(4x)^{3}$ 6.$\frac{68f^{5}g^{-3}}{4f^{-3}g^{6}}$

*Evaluate.*

7. If $f\left(x\right)=-2^{x-1}+5$, then $f\left(6\right)=\\_\\_\\_\\_\\_\\_\\_$.

*Solve.*

8. $\sqrt[3]{4x+1}-5=0$ 9. $x+2=\sqrt{3x+6}$ 10. $5(6x+1)^{\frac{1}{4}}=10$