Math 8 Name_____

Estimating Imperfect Square and Cube Roots

Score_____Per____

Evaluate the following.

1. $\sqrt{144} =$ _____

2. $\sqrt{-25} =$ _____

3. $-\sqrt{100} =$ _____

4. $\pm\sqrt{784} =$ _____

5. $-\sqrt[3]{8} =$ _____

6. $\sqrt[3]{27} =$ _____

7. $\sqrt[3]{-512} =$ _____

8. $\sqrt[3]{1} =$ _____

9. If you enter π into your calculator you might see the following:

Is this number equivalent to π?_____Explain._____

_____

_____

Use your calculator to approximate the following square roots to the **nearest tenth**. Write your answer using the symbol ≈.

10. $\sqrt{14} \approx$ _____

11. $\sqrt{40} \approx$ _____

12. $\sqrt{95} \approx$ _____

13. $\sqrt{176} \approx$ _____

14. a. What perfect square roots does $\sqrt{17}$ fall between? $\sqrt{\_\_}$ & $\sqrt{\_\_}$

b. Simplify the perfect square roots. _____ & _____

c. Without a calculator, estimate $\sqrt{17}$ to the nearest tenth. _____

15. a. What perfect square roots does $\sqrt{2}$ fall between? $\sqrt{\_\_}$ & $\sqrt{\_\_}$

b. Simplify the perfect square roots. _____ & _____

c. Without a calculator, estimate $\sqrt{2}$ to the nearest tenth: _____

16. a. What perfect cube roots does $\sqrt[3]{55}$ fall between? $\sqrt[3]{\_\_}$ & $\sqrt[3]{\_\_}$

b. Simplify the perfect cube roots. _____ & _____.

c. Without a calculator, estimate $\sqrt[3]{55}$ to the nearest tenth: _____

Without a calculator, estimate the values of the following to the nearest tenth. Write a brief explanation about how you decided on the approximation.

17. $\sqrt{39} \approx$_____
Explanation:_____
_____
_____
_____

18. $\sqrt[3]{360} \approx$_____
Explanation:_____
_____
_____
_____

19. If the area of a square is 15 then the side length of the square is $\sqrt{\_\_\_\_\_}$

20. If the *volume* of a **cube** is 61, then the edge length of the cube is $\sqrt[3]{\_\_\_\_\_}$

In the space below, do the following problems from your book: p. 85-86 #1-8, 12, 13, 16
For #1-8, estimate to the <u>nearest tenth</u> instead of the nearest integer*

1.

2.

3.

4.

5.

6.

7.

8.

12.

13.

16.