Unit 9 Objective 1 Remediation
Estimating Square Roots

Perfect Squares

1	*4*	*9*	*16*	*25*	*36*	*49*	*64*	*81*	*100*	*121*	*144*	*169*	*196*	*225*

Example One

Approximate $\sqrt{58}$ to the nearest tenth.

Find the two perfect squares that 58 lies between.

$$\sqrt{49} < \sqrt{58} < \sqrt{64}$$

$$7 < \text{?} < 8$$

The $\sqrt{58}$ is between 7 and 8. So, the answer is 7.something.

To find the tenth, $\frac{\text{distance from 49 to 58}}{\text{distance from 49 to 64}} = \frac{58-49}{64-49} = \frac{9}{15} \approx 0.6$

So, $\sqrt{58}$ can be estimated as approximately 7.6

Example Two

Approximate $\sqrt{132}$ to the nearest tenth.

Find the two perfect squares that 132 lies between.

$$\sqrt{121} < \sqrt{132} < \sqrt{144}$$

$$11 < \text{?} < 12$$

The $\sqrt{132}$ is between 11 and 12. So, the answer is 11.something.

To find the tenth, $\frac{\text{distance from 121 to 132}}{\text{distance from 121 to 144}} = \frac{132-121}{144-121} = \frac{11}{23} \approx 0.5$

So, $\sqrt{58}$ can be estimated as approximately 11.5

Try These – Estimate each square root.

1. $\sqrt{27} =$

2. $\sqrt{32} =$

3. $\sqrt{44} =$

4. $\sqrt{50} =$

5. $\sqrt{110} =$

6. $\sqrt{97} =$

7. $\sqrt{61} =$

8. $\sqrt{124} =$

9. $\sqrt{19} =$

10. $\sqrt{71} =$