Chapter 11 Measurement and Area

11.1 Square Roots

Pages 577-581

NOTES (11.1) Square Roots

The square root of a number is one of the two equal factors of a number

Example 3 is the square root of 9 (3·3=9)

A perfect square is a number that is a square of an integer

. . . . . .
. . . . . .
. . . . . **3 · 3 =9**
. . . . . **4 · 4 = 16**
. . . . . **5 · 5 = 25**
. . . . . **6 · 6 = 36**

It is helpful to memorize the square up to 225 (see p. 794)

 **is a radical sign**

***Always evaluate the expression under the radical sign before finding the square root**

A radical expression involves a radical sign

Guided Practice pp 579-580
Calculators may be used

15) $\sqrt{81} = 9$

19) $-\sqrt{1225} = -35$

21) $\sqrt{361} = 19$

Do # 24-28 like this

27) $\sqrt{z^2 - yz + 11}$

$\sqrt{-1^2 - 4 \bullet -1 + 11}$

$\sqrt{1 - (-4) + 11}$

$\sqrt{1 + 4 + 11}$

$\sqrt{16} = 4$

29) $-\sqrt{x^2 + y^2}$

$-\sqrt{3^2 + 4^2}$

$-\sqrt{9 + 16}$

$-\sqrt{25} = -5$

Do # 30-34 like this

27) $11x^2 = 891$

$\frac{11x^2}{11x^2} = \frac{89}{11} = 891 \div 11$

$x^2 = 81$

$x = \pm\sqrt{81}$

$x = \pm 9$

33) $d^2 - 12 = 132$

$d^2 - 12 + 12 = 132 + 12$

$d^2 = 132 + 12$

$d^2 = 144$

$d^2 = \pm\sqrt{144}$

$d^2 = \pm 12$

35) $13r^2 - 5 = 203$

$13r^2 - 5 + 5 = 203 + 5$

$13r^2 = 203 + 5$

$\frac{13r^2}{13} = \frac{208}{13}$

$r^2 = 208 \div 13$

$r^2 = 16$

$r = \pm\sqrt{16}$

$r = \pm 4$