

$$\textcircled{1} \quad x^2 = 16$$

$$\sqrt{x^2} = \pm\sqrt{16}$$

$$\boxed{x = \pm 4}$$

$$\{\pm 4\}$$

$$\textcircled{3} \quad y^2 = 81$$

$$\sqrt{y^2} = \sqrt{81}$$

$$\boxed{y = \pm 9}$$

$$\{\pm 9\}$$

$$\textcircled{5} \quad x^2 = 7$$

$$\sqrt{x^2} = \pm\sqrt{7}$$

$$x = \pm\sqrt{7}$$

$$\boxed{\{\pm\sqrt{7}\}}$$

$$\textcircled{7} \quad x^2 = 50$$

$$\sqrt{x^2} = \pm\sqrt{50}$$

$$x = \pm\sqrt{25 \cdot 2}$$

$$= \pm 5\sqrt{2}$$

$$\boxed{\{\pm 5\sqrt{2}\}}$$

$$\textcircled{9} \quad 5x^2 = 20$$

$$x^2 = 4$$

$$\sqrt{x^2} = \pm\sqrt{4}$$

$$x = \pm 2$$

$$\boxed{\{\pm 2\}}$$

$$\textcircled{11} \quad 4y^2 = 49$$

$$y^2 = \frac{49}{4}$$

$$\sqrt{y^2} = \pm\sqrt{\frac{49}{4}}$$

$$y = \pm\frac{7}{2}$$

$$\boxed{\{\pm\frac{7}{2}\}}$$

$$\textcircled{13} \quad 2x^2 + 1 = 51$$

$$2x^2 = 50$$

$$x^2 = 25$$

$$\sqrt{x^2} = \pm\sqrt{25}$$

$$x = \pm 5$$

$$\boxed{\{\pm 5\}}$$

$$\textcircled{15} \quad 3x^2 - 2 = 0$$

$$3x^2 = 2$$

$$x^2 = \frac{2}{3}$$

$$\sqrt{x^2} = \pm\sqrt{\frac{2}{3}}$$

$$x = \pm\frac{\sqrt{2}}{\sqrt{3}} \left(\frac{\sqrt{3}}{\sqrt{3}}\right)$$

$$x = \pm\frac{\sqrt{6}}{3}$$

$$\boxed{\{\pm\frac{\sqrt{6}}{3}\}}$$

$$\textcircled{17} \quad 5z^2 - 7 = 0$$

$$5z^2 = 7$$

$$z^2 = \frac{7}{5}$$

$$\sqrt{z^2} = \pm\sqrt{\frac{7}{5}}$$

$$z = \pm\frac{\sqrt{7}}{\sqrt{5}} \left(\frac{\sqrt{5}}{\sqrt{5}}\right)$$

$$z = \pm\frac{\sqrt{35}}{5}$$

$$\boxed{\{\pm\frac{\sqrt{35}}{5}\}}$$

$$\textcircled{19} \quad (x-3)^2 = 16$$

$$\sqrt{(x-3)^2} = \pm\sqrt{16}$$

$$x-3 = \pm 4$$

$$\begin{array}{r} +3 \quad +3 \\ \hline x = 3 \pm 4 \end{array}$$

$$x = 3+4$$

$$\text{or}$$

$$x = 3-4$$

$$x = 7 \text{ or } -1$$

$$\boxed{\{-1, 7\}}$$

(21) $(x+5)^2 = 121$
 $\sqrt{(x+5)^2} = \pm\sqrt{121}$
 $x+5 = \pm 11$
 $\quad -5 \quad -5$
 $x = -5 \pm 11$
 $x = 6 \text{ or } x = -16$
 $\boxed{\{-16, 6\}}$

(23) $(3x+2)^2 = 9$
 $\sqrt{(3x+2)^2} = \pm\sqrt{9}$
 $3x+2 = \pm 3$
 $\quad -2 \quad -2$
 $3x = -2 \pm 3$
 $3x = -2+3 \text{ or } 3x = -2-3$
 $x = \frac{1}{3} \text{ or } x = -\frac{5}{3}$
 $\boxed{\{-\frac{5}{3}, \frac{1}{3}\}}$

(25) $(x-5)^2 = 3$
 $\sqrt{(x-5)^2} = \pm\sqrt{3}$
 $x-5 = \pm\sqrt{3}$
 $x = 5 \pm \sqrt{3}$
 $\boxed{\{5 \pm \sqrt{3}\}}$

(27) $(y+8)^2 = 11$
 $\sqrt{(y+8)^2} = \pm\sqrt{11}$
 $y+8 = \pm\sqrt{11}$
 $y = -8 \pm \sqrt{11}$
 $\boxed{\{-8 \pm \sqrt{11}\}}$

(29) $(z-4)^2 = 18$
 $\sqrt{(z-4)^2} = \pm\sqrt{18}$
 $z-4 = \pm 3\sqrt{2}$
 $z = 4 \pm 3\sqrt{2}$
 $\boxed{\{4 \pm 3\sqrt{2}\}}$

(31) $x^2 + 4x + 4 = 16$
 $(x+2)^2 = 16$
 $\sqrt{(x+2)^2} = \pm\sqrt{16}$
 $x+2 = \pm 4$
 $x = -2 \pm 4$
 $\boxed{\{-6, 2\}}$

(33) $x^2 - 6x + 9 = 36$
 $(x-3)^2 = 36$
 $\sqrt{(x-3)^2} = \pm\sqrt{36}$
 $x-3 = \pm 6$
 $x = 3 \pm 6$
 $\boxed{\{-3, 9\}}$

(35) $x^2 - 10x + 25 = 2$
 $(x-5)^2 = 2$
 $\sqrt{(x-5)^2} = \pm\sqrt{2}$
 $x-5 = \pm\sqrt{2}$
 $x = 5 \pm \sqrt{2}$
 $\boxed{\{5 \pm \sqrt{2}\}}$

(37) $x^2 + 2x + 1 = 5$ (39) $y^2 - 14y + 49 = 12$

$(x+1)^2 = 5$

$\sqrt{(x+1)^2} = \pm\sqrt{5}$

$x+1 = \pm\sqrt{5}$

$x = -1 \pm \sqrt{5}$

$\{-1 \pm \sqrt{5}\}$

$(y-7)^2 = 12$

$\sqrt{(y-7)^2} = \pm\sqrt{12}$

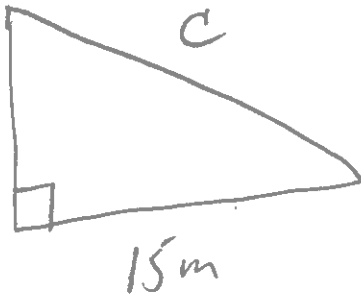
$y-7 = \pm 2\sqrt{3}$

$y = 7 \pm 2\sqrt{3}$

$\{7 \pm 2\sqrt{3}\}$

(41)

8m



$a^2 + b^2 = c^2$

$8^2 + 15^2 = c^2$

$64 + 225 = c^2$

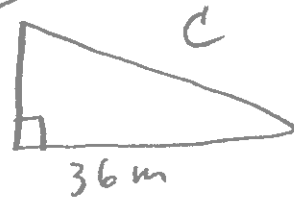
$289 = c^2$

$\sqrt{289} = c$

$c = 17m$

(43)

15m



$c^2 = a^2 + b^2$

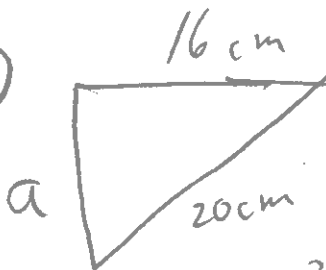
$c^2 = 15^2 + 36^2$

$c^2 = 225 + 1296$

$c = \sqrt{1521}$

$c = 39m$

(45)



$c^2 = a^2 + b^2$

$20^2 = a^2 + 16^2$

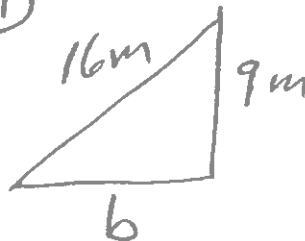
$400 - 256 = a^2$

$144 = a^2$

$a = \sqrt{144}$

$a = 12cm$

(47)



$a^2 + b^2 = c^2$

$9^2 + b^2 = 16^2$

$-9^2 \quad -9^2$

$b^2 = 16^2 - 9^2$

$b^2 = 256 - 81$

$b = \sqrt{175}$

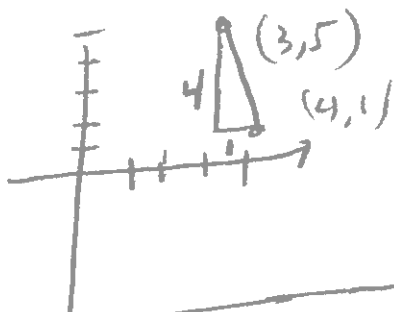
$b = \sqrt{7 \cdot 25}$

$b = 5\sqrt{7}m$

(P3)

49

(x_1, y_1)
 $(3, 5)$ and (x_2, y_2)
 $(4, 1)$



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

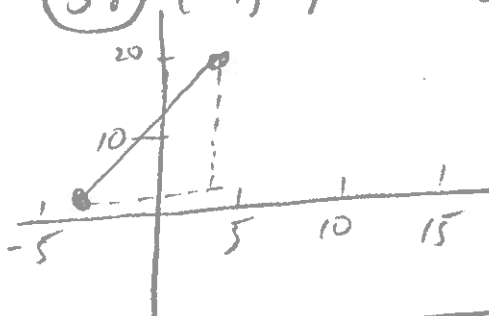
$$= \sqrt{(4 - 3)^2 + (1 - 5)^2}$$

$$= \sqrt{1^2 + (-4)^2}$$

$$= \sqrt{17}$$

$$\approx 4.12$$

10.1 p 606 (x_1, y_1) (x_2, y_2)
51 $(-4, 2)$ and $(4, 17)$



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$= \sqrt{(4 - (-4))^2 + (17 - 2)^2}$$

$$= \sqrt{8^2 + 15^2}$$

$$= \sqrt{289}$$

$$= 17 \text{ units}$$