

3.2, 3.3 Review Worksheet

Answer Key

① $3\sqrt{-25} = 3(5i) = 15i$

② $2\sqrt{-40} = 2(2i\sqrt{10}) = 4i\sqrt{10}$

③ $4\sqrt{-54} = 4(3i\sqrt{6}) = 12i\sqrt{6}$

④ $2x = 14$ $-3y = 12$
 $x = 7$ $y = -4$

⑤ $\frac{1}{3}x = 8$ $-6 = -3y$
 $x = 24$ $y = 2$

⑥* $22 = 2x$ $\frac{1}{5}y = -2$
 $x = 11$ $y = -10$

⑦ $-1 = -x$ $10 = 3y$
 $x = 1$ $y = \frac{10}{3}$

* Problem should've read $22 + \frac{1}{5}yi = 2x - 2i$

⑧ $-6 + 13i$

⑨ $8 + 6i$

⑩ $-3 + 15i$

⑪ $5 + i$

⑫ $(20 + 8i + 35i + 14i^2)$
 $20 + 43i - 14$
 $6 + 43i$

⑬ $(25 + 15i - 15i - 9i^2)$
 $25 + 9$
 34

⑭ $(100 + 70i - 70i - 49i^2)$
 $100 + 49$
 149

⑮ $(6 - 4i)(6 - 4i)$
 $36 - 24i - 24i + 16i^2$
 $36 - 48i - 16$
 $20 - 48i$

⑯ $-x^2 - 48 = 0$
 $-x^2 = 48$
 $\sqrt{x^2} = \pm\sqrt{-48}$
 $x = \pm i\sqrt{48} \cdot \frac{16}{3}$
 $x = \pm 4i\sqrt{3}$

⑰ $-\frac{1}{4}x^2 - 13 = 0$
 $-\frac{1}{4}x^2 = 13$
 $\sqrt{x^2} = \pm\sqrt{-52}$
 $x = \pm 2i\sqrt{13}$

⑱ $\sqrt{(w-11)^2} = \pm\sqrt{81}$
 $w-11 = \pm 9$
 $w = 11 \pm 9$
 $w = 2, 20$

⑲ $(k-8)^2 = -8$
 $k-8 = \pm 2i\sqrt{2}$
 $k = 8 \pm 2i\sqrt{2}$

$$\begin{aligned} (20) \quad (t-15)^2 &= -24 \\ t-15 &= \pm\sqrt{-24} \\ t-15 &= \pm 2i\sqrt{6} \\ t &= 15 \pm 2i\sqrt{6} \end{aligned}$$

$$\begin{aligned} (21) \quad (3p+1)^2 &= 12 \\ 3p+1 &= \pm 2\sqrt{3} \\ 3p &= -1 \pm 2\sqrt{3} \\ p &= \frac{-1 \pm 2\sqrt{3}}{3} \end{aligned}$$

$$(22) \quad \frac{x^2+16x+64}{(x+8)^2}$$

$$(23) \quad \frac{x^2+7x+\frac{49}{4}}{(x+\frac{7}{2})^2}$$

$$(24) \quad \frac{y^2-3y+\frac{9}{4}}{(y-\frac{3}{2})^2}$$

$$(25) \quad \frac{y^2+20y+100}{(y+10)^2}$$

$$(26) \quad q^2+6q+9=1+9$$

$$(27) \quad \frac{5h^2-5h-15=0}{5}$$

$$\begin{aligned} (q+3)^2 &= 10 \\ q+3 &= \pm\sqrt{10} \\ q &= -3 \pm \sqrt{10} \end{aligned}$$

$$\begin{aligned} h^2-h-3 &= 0 \\ h^2-h+\frac{1}{4} &= 3+\frac{1}{4} \end{aligned}$$

$$\begin{aligned} (h-\frac{1}{2})^2 &= \frac{13}{4} \\ h-\frac{1}{2} &= \pm\frac{\sqrt{13}}{2} \end{aligned}$$

$$h = \frac{1}{2} \pm \frac{\sqrt{13}}{2}$$

$$(28) \quad \frac{3x^2+24x+15=0}{3}$$

$$(29) \quad \frac{3y^2-24y=-36}{3}$$

$$\begin{aligned} x^2+8x+5 &= 0 \\ x^2+8x+16 &= -5+16 \\ (x+4)^2 &= 11 \\ x+4 &= \pm\sqrt{11} \\ x &= -4 \pm \sqrt{11} \end{aligned}$$

$$\begin{aligned} y^2-8y+16 &= -12+16 \\ \sqrt{(y-4)^2} &= \sqrt{4} \\ y-4 &= \pm 2 \\ y &= 4 \pm 2 \\ y &= 2, 6 \end{aligned}$$