

10-2 Practice

Form G

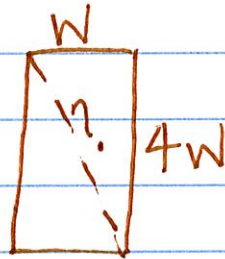
$$\begin{aligned} (15) \quad & 2\sqrt{3} \cdot \sqrt{96} \\ & 2\sqrt{288} \\ & 2 \cdot \sqrt{144 \cdot 2} \\ & 2 \cdot \sqrt{144} \cdot \sqrt{2} \\ & 2 \cdot 12 \cdot \sqrt{2} \\ & \boxed{24\sqrt{2}} \end{aligned}$$

$$\begin{aligned} (17) \quad & \sqrt{4a} \cdot \sqrt{12a^5} \\ & \sqrt{4a \cdot 12a^5} \\ & \sqrt{48a^6} \\ & \sqrt{16} \cdot \sqrt{3} \cdot \sqrt{a^6} \\ & \boxed{4a^3\sqrt{3}} \end{aligned}$$

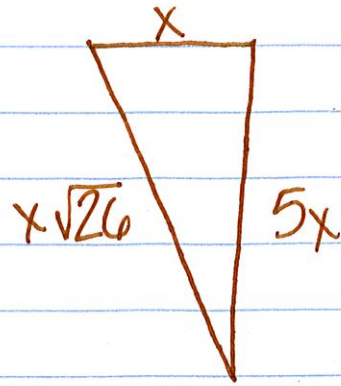
$$\begin{aligned} (19) \quad & -3\sqrt{40x} \cdot 2\sqrt{56x^5} \\ & -6\sqrt{40x \cdot 56x^5} \\ & -6\sqrt{2240x^6} \\ & -6 \cdot \sqrt{64} \cdot \sqrt{35} \cdot \sqrt{x^6} \\ & -6 \cdot 8 \cdot x^3 \cdot \sqrt{35} \\ & \boxed{-48x^3\sqrt{35}} \end{aligned}$$

$$\begin{aligned} (21) \quad & 4\sqrt{14d^2} \cdot \frac{1}{2}\sqrt{28d^3} \\ & 2\sqrt{14d^2 \cdot 28d^3} \\ & 2\sqrt{392d^5} \\ & 2\sqrt{196} \cdot \sqrt{2} \cdot \sqrt{d^5} \\ & 2 \cdot 14 \cdot d^2 \cdot \sqrt{2d} \\ & \boxed{28d^2\sqrt{2d}} \end{aligned}$$

$$\begin{aligned} (22) \quad & a^2 + b^2 = c^2 \\ & w^2 + (4w)^2 = c^2 \\ & w^2 + 16w^2 = c^2 \\ & 17w^2 = c^2 \\ & \sqrt{17w^2} = c \\ & \boxed{w\sqrt{17} = c} \end{aligned}$$



$$\begin{aligned}
 (23) \quad a^2 + b^2 &= c^2 \\
 x^2 + (5x)^2 &= c^2 \\
 x^2 + 25x^2 &= c^2 \\
 26x^2 &= c^2 \\
 \sqrt{26x^2} &= c \\
 x\sqrt{26} &= c
 \end{aligned}$$



$$\text{Total distance} = x + 5x + x\sqrt{26} = \boxed{6x + x\sqrt{26}}$$

$$(27) \quad \sqrt{\frac{18y}{36y^3}} = \sqrt{\frac{1}{2y^2} \cdot \frac{\sqrt{2y^2}}{\sqrt{2y^2}}} = \frac{\sqrt{2y^2}}{2y^2} = \frac{y\sqrt{2}}{2y^2} = \boxed{\frac{\sqrt{2}}{2y}}$$

$$(29) \quad \sqrt{\frac{16a^2}{4b^4}} = \frac{4a}{2b^2} = \boxed{\frac{2a}{b^2}}$$

$$(31) \quad \frac{\sqrt{12} \cdot \sqrt{15}}{\sqrt{15} \cdot \sqrt{15}} = \frac{\sqrt{180}}{15} = \frac{\sqrt{36} \cdot \sqrt{5}}{15} = \frac{6\sqrt{5}}{15} = \boxed{\frac{2\sqrt{5}}{5}}$$

$$(33) \quad \sqrt{\frac{25b}{5b^3}} = \sqrt{\frac{5}{b^2}} = \boxed{\frac{\sqrt{5}}{b}}$$

$$(35) \quad \frac{\sqrt{8}}{\sqrt{30m^2}} = \sqrt{\frac{4}{15m^2}} = \frac{\sqrt{4} \cdot \sqrt{15}}{m\sqrt{15} \cdot \sqrt{15}} = \frac{\sqrt{60}}{15m} = \frac{\sqrt{4 \cdot 15}}{15m} = \boxed{\frac{2\sqrt{15}}{15m}}$$

(36) a. $\sqrt{300} = 10\sqrt{3}$ in (each side)

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

$$(10\sqrt{3})^2 + (10\sqrt{3})^2 = c^2$$

$$100 \cdot 3 + 100 \cdot 3 = c^2$$

$$600 = c^2$$

$$\sqrt{600} = c$$

$$\boxed{10\sqrt{6} \text{ in} = c}$$

(37) a. $\sqrt{\frac{1256}{4\pi}} = \sqrt{\frac{314}{\pi}} = \sqrt{100} = \boxed{10 \text{ in}}$

b. $\sqrt{\frac{200.96}{4\pi}} = \sqrt{\frac{50.24}{\pi}} = \sqrt{16} = \boxed{4 \text{ in}}$

Bonus

→ c. $\sqrt{\frac{379.94}{4\pi}} = \sqrt{\frac{94.985}{3.14}} = \sqrt{30.25} = \boxed{5.5 \text{ in}}$