

Show your work for full credits. (7 pts each)

1. Simplify: $\sqrt{8a^3b^5}$

2. Simplify: $\sqrt[3]{54a^6b^4}$

3. If $a > 0$, then $\sqrt{9a^2 + 16a^2}$ equals

1) $\sqrt{7a}$

2) $5\sqrt{a}$

3) $5a$

4) $7a$

4. Simplify and add.

$$\sqrt{18} + \sqrt{8} - \sqrt{3}$$

5. Evaluate

$$(2 - \sqrt{3})^2$$

6. Evaluate

$$(4\sqrt{xy} - \sqrt{x})(\sqrt{xy} + \sqrt{y})$$

7. Simplify

$$\frac{3}{\sqrt{2}}$$

8. Simplify

$$\frac{2}{2 - \sqrt{3}}$$

9. The expression $4ab\sqrt{2b} - 3a\sqrt{18b^3} + 7ab\sqrt{6b}$ is equivalent to

- 1) $2ab\sqrt{6b}$
- 2) $16ab\sqrt{2b}$
- 3) $-5ab + 7ab\sqrt{6b}$
- 4) $-5ab\sqrt{2b} + 7ab\sqrt{6b}$

10. Multiply

$$2\sqrt{xy}(3x\sqrt{xy^3} - \sqrt{xy^2})$$

11. Multiply

$$(2\sqrt{x^4yz^2})(\sqrt{x^2y^4z})$$

12. Rationalize the given fraction.

$$\frac{3 - \sqrt{4}}{3 + \sqrt{4}}$$

13. Multiply.

$$\left(2 \sqrt[3]{x^2y}\right) \left(\sqrt[3]{3xy^4}\right)$$

14. Simplify

$$\sqrt[5]{320}$$