

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 1.6

Math 1090 Worksheet

FALL 2026

For practice only. Not to be submitted.

1. Assuming $x > 0$ and $y > 0$ where necessary, simplify each of the following.

(a) $6\sqrt{20} - 5\sqrt{45}$

(b) $\sqrt[3]{81x^7}$

(c) $\sqrt{8xy^3} \cdot \sqrt{2xy}$

(d) $\frac{\sqrt[4]{32x}}{\sqrt[4]{2x^5}}$

(e) $\sqrt{27x^2 - 9x^3}$

(f) $\sqrt[3]{27\sqrt{64x}}$

2. Rationalise the denominator and simplify each expression.

(a) $\frac{15}{2\sqrt{5}}$

(b) $\frac{3}{6 - 4\sqrt{3}}$

(c) $\frac{1}{\sqrt{7} + 3\sqrt{2}}$

3. Evaluate each of the following, if possible.

(a) $25^{\frac{3}{2}}$

(b) $(-8)^{\frac{5}{3}}$

(c) $(-16)^{\frac{7}{4}}$

(d) $81^{-\frac{3}{4}}$

(e) $\left(\frac{1}{125}\right)^{\frac{2}{3}}$

(f) $\left(\frac{49}{9}\right)^{-\frac{3}{2}}$