

is a square number?

a) 324

b) 160

sol:

we find the factors for each.

324: 1, 2, 3, 4, 6, 9, 12, 18, 27, 36, 54

81, 108, 162, 324.

324 has 15 factors

so, 324 is a square, 18 is

a square root.

160: 1, 2, 4, 5, 8, 10, 16,

20, 32, 40, 80, 160

160 has 12 factors

↓
even number

so, 160 is not a square number

b) $\sqrt{\frac{64 \times 3}{49}}$

sol $\sqrt{\frac{64 \times 3}{49}} \rightarrow \frac{\sqrt{64 \times 3}}{\sqrt{49}}$

$= \frac{\sqrt{8 \times 8 \times 3}}{\sqrt{7 \times 7}} \rightarrow$ drop the twin.

$= \frac{8\sqrt{3}}{7} = \underline{\underline{\frac{8\sqrt{3}}{7}}}$

c) $\sqrt{12.25}$

sol

we find the improper fractions under the root square, $\sqrt{\quad}$

$\therefore \sqrt{\frac{1225}{100}} = \frac{\sqrt{1225}}{\sqrt{100}} = \frac{\sqrt{35 \times 35}}{\sqrt{10 \times 10}}$

Drop a twin.

$\sqrt{\frac{1225}{100}} = \sqrt{\frac{35 \times 35}{10 \times 10}} = \frac{35}{10} = \underline{\underline{3.5}}$

NB/ practice often, practice more, Be flexible.

4. Evaluate

a) $\sqrt{8^2 \times 6^2 \times 3^2}$

sol

$\sqrt{(8 \times 8) \times (6 \times 6) \times (3 \times 3)}$

drop one of the twin, we've

$\sqrt{8^2 \times 6^2 \times 3^2} = 8 \times 6 \times 3 = \underline{\underline{144}}$

