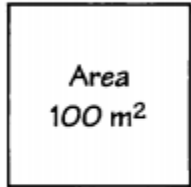## Spiral Review 12 – Roots

# Why Did Orgo Check His Animal Cookies Before Eating Any?

*Write the letter of each exercise in the space containing the answer.*

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**Find the length of a side (*s*) of each square.**

Area
100 m²

Area
49 ft²

**T.** *s* = _____ m

**E.** *s* = _____ ft

**Find the square root.**

**O.** $\sqrt{25}$

**W.** $3\sqrt{121}$

**A.** $\sqrt{900}$

**D.** $-\sqrt{1}$

**E.** $-\sqrt{25}$

**H.** $-\sqrt{8100}$

**T.** $-\sqrt{900}$

**N.** $\sqrt{10,000}$

**Find the area (*A*) of each square.**

8 in.

25 cm

**E.** *A* = _____ in.²
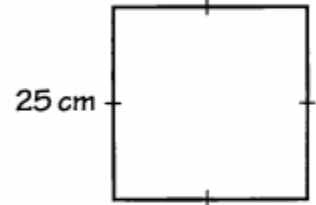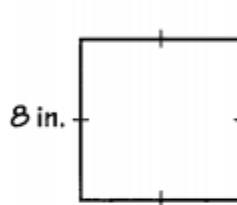
**T.** *A* = _____ cm²

**Simplify.**

**H.** $\sqrt{64}$

**R.** $\sqrt{625}$

**E.** $\sqrt{0.64}$

**E.** $-\sqrt{6.25}$

**S.** $\sqrt{16} + \sqrt{9}$

**H.** $\sqrt{100} - \sqrt{64}$

**E.** $\sqrt{16 + 9}$

**W.** $\sqrt{100 - 64}$

answers for left side

| -90 | | -4 | | ±30 | | 10 | | -1 | | -30 |
|-----|--|-----|--|-----|--|----|--|-----|--|-----|
| | 7 | | 33 | | ±100 | | -5 | | 35 | | ± 5 |

answers for right side

| ±7 | | 64 | | ±6 | | ±5 | | 2 | | ±25 |
|-----|--|-----|--|-----|--|-----|--|-----|--|------|
| -1.5 | | -2.5 | | 3 | | ± 8 | | 625 | | ±0.8 |

**Simplify.**

**A.** $\sqrt[3]{2197}$

**E.** $x^3 = 8$

**T.** $\sqrt[3]{-512}$

**A.** $x^2 = 1444$

**H.** $\sqrt{30^2 + 40^2}$

**S.** $x^3 = 343$

**E.** $x^2 = 900$

**H.** $\sqrt{90^2}$

**D.** $\sqrt{\dfrac{49}{81}}$

**L.** $-\sqrt{\dfrac{1}{100}}$

**Estimate each square root without using a calculator. From the answers at the bottom of the page, choose the best estimate.**

**E.** $\sqrt{10}$

**E.** $-\sqrt{30}$

**N.** $\sqrt{98}$

**N.** $-\sqrt{60}$

**O.** $\sqrt{40}$

**B.** $-\sqrt{5}$

**E.** $\sqrt{75}$

**K.** $\sqrt{200}$

**B.** $\sqrt{150}$

**R.** $\sqrt{392}$

answers for left side

| -8 | | 2 | | | | 13 | | 76 | | ±38 |
|-----|--|-----|--|---|--|-----|--|-----|--|------|
| | | | | 7 | | | | | | |
| | 90 | | $\frac{1}{50}$ | | ±30 | | $-\frac{1}{10}$ | | 50 | | $\pm\frac{7}{9}$ |

answers for right side

| -2.2 | | 3.2 | | 16.5 | | 19.8 | | 14.1 | | 9.9 |
|------|--|-----|--|------|--|------|--|------|--|-----|
| -7.1 | | 8.7 | | -7.7 | | 12.2 | | 6.3 | | -5.5 |

**Extension:** Find square roots of not perfect squares without getting a decimal answer.

Examples:

$\sqrt{50}$

think of a perfect square that is a multiple...

$\sqrt{25 \cdot 2}$    $\sqrt{25} = 5$

$\boxed{5\sqrt{2}} \rightarrow$ final answer

$\sqrt{27}$

$\sqrt{9 \cdot 3}$

$\boxed{3\sqrt{3}}$

Now you try...

1) $\sqrt{20} =$

$\sqrt{4 \cdot 5} =$

2) $\sqrt{12} =$

3) $\sqrt{45} =$

4) $\sqrt{32} =$