

EVAN BOUGHT A RECTANGULAR DOORMAT THAT IS 1_2 METER LONG AND 3__10 METER WIDE. WHAT IS THE AREA, IN SQUARE

EVAN BOUGHT A RECTANGULAR DOORMAT THAT IS 1_2 METER LONG AND 3__10 METER WIDE. WHAT IS THE AREA, IN SQUARE

UNDERSTANDING THE DIMENSIONS AND CALCULATING THE AREA OF A DOORMAT MAY SEEM STRAIGHTFORWARD, BUT WHEN THE MEASUREMENTS ARE GIVEN IN MIXED OR FRACTIONAL FORMS, IT REQUIRES CAREFUL INTERPRETATION AND ACCURATE COMPUTATION. IN THIS ARTICLE, WE WILL EXPLORE HOW TO DETERMINE THE AREA OF EVAN'S RECTANGULAR DOORMAT, WHICH MEASURES 1_2 METERS IN LENGTH AND 3__10 METERS IN WIDTH, AND EXPLAIN THE STEPS INVOLVED IN SUCH CALCULATIONS. WHETHER YOU'RE A STUDENT LEARNING ABOUT AREA CALCULATIONS OR A HOMEOWNER INTERESTED IN UNDERSTANDING DIMENSIONS BETTER, THIS GUIDE WILL PROVIDE CLEAR, DETAILED INSIGHTS.

DECIPHERING THE DIMENSIONS OF THE DOORMAT

BEFORE CALCULATING THE AREA, IT'S ESSENTIAL TO UNDERSTAND AND INTERPRET THE GIVEN MEASUREMENTS CORRECTLY.

UNDERSTANDING THE LENGTH: 1_2 METER

THE NOTATION "1_2" LIKELY SIGNIFIES A FRACTIONAL MEASUREMENT, PROBABLY "1 1/2" METERS, WHICH COMBINES A WHOLE NUMBER WITH A FRACTION.

- POSSIBLE INTERPRETATION: 1_2 METERS = 1 1/2 METERS = 1.5 METERS

- RATIONALE:

- THE UNDERSCORE MAY BE A PLACEHOLDER FOR A FRACTION SEPARATOR.

- "1 1/2" IS A COMMON WAY TO EXPRESS ONE AND A HALF METERS.

UNDERSTANDING THE WIDTH: 3__10 METER

SIMILARLY, "3__10" SEEMS TO BE A FRACTIONAL MEASUREMENT, PROBABLY "3 10/100" METERS, WHICH SIMPLIFIES TO 3 1/10 METERS.

- POSSIBLE INTERPRETATION: 3__10 METERS = 3 1/10 METERS = 3.1 METERS

- RATIONALE:

- THE DOUBLE UNDERSCORE MAY REPRESENT A FRACTION BAR, INDICATING A MIXED NUMBER.

- 10/100 SIMPLIFIES TO 1/10, SO THE MEASUREMENT IS 3 1/10 METERS.

CONVERTING MIXED NUMBERS TO DECIMAL FORM

TO PERFORM AREA CALCULATIONS, IT'S GENERALLY EASIEST TO WORK WITH DECIMAL NUMBERS.

CONVERTING LENGTH

- $1 \frac{1}{2}$ METERS:
- $1 + \frac{1}{2} = 1 + 0.5 = 1.5$ METERS

CONVERTING WIDTH

- $3 \frac{1}{10}$ METERS:
- $3 + \frac{1}{10} = 3 + 0.1 = 3.1$ METERS

CALCULATING THE AREA OF THE DOORMAT

THE AREA OF A RECTANGLE IS CALCULATED BY MULTIPLYING ITS LENGTH BY ITS WIDTH.

FORMULA FOR AREA

$$[\text{AREA} = \text{LENGTH} \times \text{WIDTH}]$$

- USING THE INTERPRETED MEASUREMENTS:

$$[\text{AREA} = 1.5 \text{ METERS} \times 3.1 \text{ METERS}]$$

PERFORMING THE CALCULATION

- MULTIPLY:

$$[1.5 \times 3.1]$$

- BREAK DOWN THE MULTIPLICATION:

$$[(1 + 0.5) \times (3 + 0.1)]$$

- USING DISTRIBUTIVE PROPERTY:

$$[(1 \times 3) + (1 \times 0.1) + (0.5 \times 3) + (0.5 \times 0.1)]$$

- CALCULATE EACH TERM:

1. $(1 \times 3 = 3)$
2. $(1 \times 0.1 = 0.1)$
3. $(0.5 \times 3 = 1.5)$
4. $(0.5 \times 0.1 = 0.05)$

- SUM ALL TERMS:

$$[3 + 0.1 + 1.5 + 0.05 = 4.65]$$

THEREFORE, THE AREA OF EVAN'S DOORMAT IS 4.65 SQUARE METERS.

UNDERSTANDING THE SIGNIFICANCE OF THE AREA

KNOWING THE AREA OF A DOORMAT IS USEFUL FOR VARIOUS REASONS:

- PROPER SIZING: ENSURING THE DOORMAT FITS WELL AT THE ENTRANCE.
- MATERIAL ESTIMATION: CALCULATING THE AMOUNT OF MATERIAL NEEDED FOR MANUFACTURING OR REPLACEMENT.
- DESIGN CONSIDERATIONS: CHOOSING THE RIGHT SIZE FOR AESTHETIC AND FUNCTIONAL PURPOSES.

PRACTICAL APPLICATIONS

- HOMEOWNERS: TO SELECT A DOORMAT THAT FITS THEIR DOORWAY.
- MANUFACTURERS: FOR INVENTORY AND PRODUCTION PLANNING.
- INTERIOR DECORATORS: TO MATCH OTHER ELEMENTS IN AN ENTRYWAY.

ADDITIONAL CONSIDERATIONS IN MEASUREMENTS

WHILE THIS CALCULATION ASSUMES THE MEASUREMENTS ARE IN METERS AND DIRECTLY INTERPRETABLE, REAL-WORLD MEASUREMENTS CAN SOMETIMES INVOLVE MORE COMPLEX FRACTIONS OR DIFFERENT UNITS.

UNIT CONSISTENCY

- ALWAYS ENSURE MEASUREMENTS ARE IN THE SAME UNITS BEFORE MULTIPLYING.
- CONVERT ALL FRACTIONAL OR MIXED NUMBERS TO DECIMAL FORM FOR EASE OF CALCULATION.

MEASUREMENT ACCURACY

- USE PRECISE MEASURING TOOLS WHEN MEASURING PHYSICAL ITEMS.
- BE AWARE OF POTENTIAL ROUNDING ERRORS WHEN CONVERTING FRACTIONS.

SUMMARY OF CALCULATION PROCESS

TO SUMMARIZE, CALCULATING THE AREA OF EVAN'S DOORMAT INVOLVED:

1. INTERPRETING THE GIVEN MEASUREMENTS AS MIXED NUMBERS: $1 \frac{1}{2}$ METERS AND $3 \frac{1}{10}$ METERS.
2. CONVERTING THESE MIXED NUMBERS INTO DECIMAL FORM: 1.5 METERS AND 3.1 METERS.
3. APPLYING THE RECTANGLE AREA FORMULA: LENGTH $\times$ WIDTH.
4. MULTIPLYING 1.5 BY 3.1 TO FIND THE TOTAL AREA.
5. RESULTING IN AN AREA OF 4.65 SQUARE METERS.

CONCLUSION

CALCULATING THE AREA OF A RECTANGULAR OBJECT LIKE EVAN'S DOORMAT REQUIRES CAREFUL INTERPRETATION OF MEASUREMENT NOTATION, CONVERSION INTO WORKABLE FORMS, AND APPLICATION OF BASIC GEOMETRIC FORMULAS. THE PROCESS EXEMPLIFIES HOW UNDERSTANDING MEASUREMENT CONVENTIONS AND PERFORMING ACCURATE CALCULATIONS ARE VITAL IN EVERYDAY TASKS, FROM HOME IMPROVEMENT TO MANUFACTURING. WITH A DOORMAT MEASURING APPROXIMATELY 4.65 SQUARE METERS, EVAN CAN CONFIDENTLY SELECT OR CUSTOMIZE A MAT THAT FITS JUST RIGHT, ENSURING BOTH FUNCTIONALITY AND AESTHETIC APPEAL.

META DESCRIPTION:

LEARN HOW TO CALCULATE THE AREA OF A RECTANGULAR DOORMAT MEASURING $1\frac{1}{2}$ METERS IN LENGTH AND $3\frac{1}{10}$ METERS IN WIDTH. STEP-BY-STEP GUIDE TO INTERPRETING MEASUREMENTS AND COMPUTING AREA IN SQUARE METERS.

KEYWORDS:

AREA OF DOORMAT, RECTANGULAR DOORMAT DIMENSIONS, HOW TO CALCULATE AREA, MIXED NUMBER MEASUREMENTS, CONVERTING FRACTIONS TO DECIMALS, AREA CALCULATION STEPS

FREQUENTLY ASKED QUESTIONS

WHAT ARE THE DIMENSIONS OF EVAN'S RECTANGULAR DOORMAT?

THE DOORMAT IS $1\frac{1}{2}$ METER LONG AND $3\frac{1}{10}$ METER WIDE.

HOW DO YOU CALCULATE THE AREA OF A RECTANGLE?

THE AREA OF A RECTANGLE IS FOUND BY MULTIPLYING ITS LENGTH BY ITS WIDTH.

WHAT IS THE AREA OF EVAN'S DOORMAT IN SQUARE METERS?

THE AREA IS $(1\frac{1}{2}) \times (3\frac{1}{10}) = \frac{3}{20}$ SQUARE METERS.

WHAT IS $\frac{3}{20}$ EXPRESSED AS A DECIMAL?

$\frac{3}{20}$ AS A DECIMAL IS 0.15.

WHAT IS THE SIMPLIFIED FORM OF THE AREA OF THE DOORMAT?

THE AREA IN SIMPLIFIED FRACTION FORM IS $\frac{3}{20}$ SQUARE METERS.

HOW CAN THE AREA OF THE DOORMAT BE EXPRESSED IN SQUARE CENTIMETERS?

SINCE 1 METER = 100 CENTIMETERS, MULTIPLY $\frac{3}{20}$ BY 10,000 TO GET 750 SQUARE CENTIMETERS.

WHY IS IT IMPORTANT TO KNOW THE AREA OF A DOORMAT?

KNOWING THE AREA HELPS DETERMINE IF THE DOORMAT FITS A SPECIFIC SPACE AND CAN BE USEFUL FOR PURCHASING OR CLEANING PURPOSES.

IF EVAN WANTS A DOORMAT WITH DOUBLE THE AREA, WHAT SHOULD BE THE NEW AREA?

THE NEW AREA SHOULD BE $2 \times 3/20 = 3/10$ SQUARE METERS.

CAN THE AREA BE CALCULATED USING A DIFFERENT UNIT OF MEASUREMENT?

YES, THE AREA CAN BE CONVERTED INTO SQUARE CENTIMETERS, INCHES, OR OTHER UNITS DEPENDING ON THE MEASUREMENT SYSTEM USED.

WHAT ARE COMMON MISTAKES TO AVOID WHEN CALCULATING THE AREA OF A RECTANGLE?

COMMON MISTAKES INCLUDE MIXING UNITS, INCORRECT MULTIPLICATION OF DIMENSIONS, OR FORGETTING TO CONVERT FRACTIONS TO DECIMALS WHEN NECESSARY.

ADDITIONAL RESOURCES

RECTANGULAR DOORMAT: AN IN-DEPTH ANALYSIS OF ITS DIMENSIONS AND AREA CALCULATION

WHEN IT COMES TO ENHANCING THE AESTHETIC APPEAL AND FUNCTIONALITY OF AN ENTRYWAY, A WELL-CHOSEN DOORMAT PLAYS A PIVOTAL ROLE. NOT ONLY DOES IT SERVE AS A BARRIER AGAINST DIRT AND MOISTURE, BUT IT ALSO OFFERS A FIRST IMPRESSION OF CLEANLINESS AND STYLE. AMONG THE VARIOUS OPTIONS AVAILABLE, RECTANGULAR DOORMATS ARE PARTICULARLY POPULAR DUE TO THEIR SIMPLICITY AND VERSATILITY. IN THIS ARTICLE, WE EXAMINE A SPECIFIC RECTANGULAR DOORMAT PURCHASED BY EVAN, FOCUSING ON UNDERSTANDING ITS DIMENSIONS AND CALCULATING ITS AREA WITH PRECISION. BY DISSECTING THE MEASUREMENTS AND THE MATH INVOLVED, WE AIM TO PROVIDE A COMPREHENSIVE UNDERSTANDING OF THIS DOORMAT'S SIZE AND POTENTIAL UTILITY.

UNDERSTANDING THE DIMENSIONS: LENGTH AND WIDTH OF THE DOORMAT

BEFORE DELVING INTO THE CALCULATIONS, IT'S CRUCIAL TO INTERPRET THE DIMENSIONS PROVIDED FOR EVAN'S DOORMAT. THE MEASUREMENTS ARE GIVEN AS:

- 1_2 METER LONG
- 3__10 METER WIDE

THESE NOTATIONS MAY LOOK UNFAMILIAR AT FIRST GLANCE, BUT THEY ARE LIKELY MEANT TO REPRESENT FRACTIONS OR PLACEHOLDERS FOR FRACTIONAL PARTS, COMMON IN MEASUREMENTS.

DECIPHERING THE LENGTH: "1_2 METER"

THE NOTATION "1_2 METER" APPEARS TO BE A STYLIZED WAY OF EXPRESSING A FRACTIONAL MEASUREMENT. IT STRONGLY SUGGESTS THAT THE UNDERSCORE REPRESENTS A FRACTION BAR, AND THE INTENDED MEASUREMENT IS:

$1/2$ METER

THIS IS A COMMON WAY OF EXPRESSING HALF A METER, EQUIVALENT TO 0.5 METERS. ALTERNATIVELY, IF THE NOTATION IS SLIGHTLY OFF, IT'S POSSIBLE THAT IT WAS MEANT TO BE "1 1/2 METERS" (ONE AND A HALF METERS). HOWEVER, GIVEN THE POSITIONING AND TYPICAL MEASUREMENT CONVENTIONS, "1/2 METER" IS THE MOST LOGICAL INTERPRETATION.

CONCLUSION:

THE DOORMAT’S LENGTH IS 0.5 METERS.

DECIPHERING THE WIDTH: “3__10 METER”

SIMILARLY, “3__10” SEEMS TO BE AN INCOMPLETE OR STYLIZED NOTATION, LIKELY REPRESENTING A MIXED NUMBER OR A FRACTION. THE DOUBLE UNDERScore COULD SIGNIFY A FRACTIONAL SEPARATOR.

COMMON INTERPRETATIONS INCLUDE:

- 3/10 METER (THREE-TENTHS OF A METER)
- 3 10/100 METERS (WHICH SIMPLIFIES TO 3 1/10 METERS)

GIVEN THE CONTEXT AND TYPICAL MEASUREMENT NOTATION, THE MOST PROBABLE INTERPRETATION IS:

3/10 METER (0.3 METERS)

ALTERNATIVELY, IF IT’S MEANT TO BE “3 10/100 METERS,” IT TRANSLATES TO:

$3 + 10/100 = 3 + 0.10 = 3.10$ METERS

GIVEN THE SIZE OF A DOORMAT, A WIDTH OF 3.10 METERS SEEMS EXCESSIVELY LARGE—MORE APPROPRIATE FOR A ROOM OR HALLWAY, NOT A DOORMAT. CONVERSELY, 0.3 METERS (30 CENTIMETERS) IS A REASONABLE WIDTH FOR A DOORMAT.

CONCLUSION:

THE MOST SENSIBLE INTERPRETATION, CONSIDERING TYPICAL DOORMAT SIZES AND NOTATION, IS 0.3 METERS (OR 30 CENTIMETERS).

FINAL DIMENSIONS OF THE DOORMAT

BASED ON THE ABOVE, THE DIMENSIONS OF EVAN’S DOORMAT ARE:

DIMENSION	INTERPRETATION	MEASUREMENT IN METERS
LENGTH	1/2 METER	0.5 METERS
WIDTH	3/10 METER	0.3 METERS

THESE DIMENSIONS DESCRIBE A COMPACT RECTANGULAR MAT SUITABLE FOR AN ENTRYWAY OR SMALL PORCH.

CALCULATING THE AREA OF THE DOORMAT

THE AREA OF A RECTANGLE IS CALCULATED USING THE FUNDAMENTAL FORMULA:

$$[\text{Area} = \text{Length} \times \text{Width}]$$

GIVEN THE DIMENSIONS:

- LENGTH $(L = 0.5, \text{METERS})$
- WIDTH $(W = 0.3, \text{METERS})$

THE CALCULATION PROCEEDS AS FOLLOWS:

$$\left[\text{Area} = 0.5 \times 0.3 = 0.15, \text{square meters} \right]$$

STEP-BY-STEP BREAKDOWN:

1. CONVERT MEASUREMENTS IF NECESSARY:

BOTH ARE ALREADY IN METERS, SUITABLE FOR SI UNIT CALCULATIONS.

2. MULTIPLY THE MEASUREMENTS:

$$(0.5 \times 0.3 = 0.15)$$

3. INTERPRETING THE RESULT:

THE AREA IS 0.15 SQUARE METERS.

UNDERSTANDING THE SIGNIFICANCE OF THE AREA

KNOWING THE AREA OF THE DOORMAT HELPS IN MULTIPLE WAYS:

- COVERAGE ASSESSMENT:

ENSURES THE MAT IS SUFFICIENTLY LARGE TO COVER THE INTENDED ENTRY SPACE, TRAPPING DIRT EFFECTIVELY.

- MATERIAL ESTIMATION:

MANUFACTURERS CAN ESTIMATE THE AMOUNT OF MATERIAL NEEDED FOR PRODUCTION OR REPLACEMENT.

- DESIGN COMPATIBILITY:

HELPS IN COORDINATING THE DOORMAT'S SIZE WITH THE ENTRYWAY DIMENSIONS AND DECOR.

IN EVAN'S CASE, A 0.15 SQUARE METER DOORMAT IS QUITE MODEST, SUITABLE FOR SMALL ENTRIES OR AS AN ACCENT PIECE RATHER THAN A LARGE WELCOME MAT.

ADDITIONAL CONSIDERATIONS IN DOORMAT SIZING

WHILE AREA CALCULATION GIVES A NUMERICAL VALUE, SELECTING THE RIGHT DOORMAT SIZE INVOLVES ADDITIONAL FACTORS:

1. ENTRYWAY DIMENSIONS

- THE DOORMAT SHOULD BE PROPORTIONATE TO THE DOOR OPENING.

- TYPICALLY, A DOORMAT SHOULD EXTEND SLIGHTLY BEYOND THE DOOR WIDTH.

2. FUNCTIONALITY

- LARGER MATS TRAP MORE DIRT BUT MAY TAKE UP MORE SPACE.

- SMALLER MATS ARE EASIER TO CLEAN AND MANAGE.

3. DESIGN AND AESTHETICS

- SIZE IMPACTS VISUAL HARMONY WITH THE DOORWAY AND SURROUNDING AREA.

- CONSIDER STYLE, COLOR, AND PATTERN RELATIVE TO SIZE.

4. MATERIAL AND DURABILITY

- THICKER OR COARSER MATS MIGHT REQUIRE DIFFERENT SIZING CONSIDERATIONS FOR COMFORT AND DURABILITY.

SUMMARY AND FINAL THOUGHTS

EVAN'S PURCHASE OF A RECTANGULAR DOORMAT MEASURING $1/2$ METER LONG AND $3/10$ METER WIDE RESULTS IN A TOTAL AREA OF 0.15 SQUARE METERS. THIS COMPACT SIZE MAKES IT SUITABLE FOR SMALL ENTRYWAYS OR AS AN ACCENT PIECE. THE PRECISE CALCULATION INVOLVES STRAIGHTFORWARD MULTIPLICATION OF THE LENGTH AND WIDTH, EMPHASIZING THE IMPORTANCE OF UNDERSTANDING MEASUREMENT NOTATIONS AND THEIR CONVERSIONS.

IN CONCLUSION:

- THE DIMENSIONS, ONCE PROPERLY INTERPRETED, INFORM US ABOUT THE SIZE AND UTILITY OF THE DOORMAT.
- CALCULATING THE AREA PROVIDES INSIGHT INTO COVERAGE AND SUITABILITY.
- RECOGNIZING THE SIGNIFICANCE OF SIZE HELPS IN MAKING INFORMED DECISIONS ABOUT PRODUCT SELECTION AND PLACEMENT.

WHETHER FOR AESTHETIC APPEAL OR FUNCTIONAL NECESSITY, UNDERSTANDING THE DIMENSIONS AND AREA OF A DOORMAT ENSURES THAT EVAN—AND ANYONE ELSE—CAN SELECT THE PERFECT SIZE FOR THEIR ENTRYWAY NEEDS.

Evan Bought A Rectangular Doormat That Is 1 2 Meter Long And 3 10 Meter Wide What Is The Area In Square

Evan Bought A Rectangular Doormat That Is 1 2 Meter Long And 3 10 Meter Wide What Is The Area In Square

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