

ADDITIONAL BUILDING TRADES

A bricklayer needs 48 bricks to build one foot of a wall on a building. How many bricks will the bricklayer need if the wall needs to be 25 feet tall?

Answer: $48 \times 25 = 1200$ bricks

A carpenter is building a dog house with a circular entrance. He will need to place a pad around the circumference of the opening. If the diameter of the entrance is 3 feet, what is the amount of padding the carpenter will need?

Answer: Circumference = 3.14×3 the carpenter will need 9.42 feet of padding

A carpenter is cutting shelves for a closet. The shelves measure 2 feet and $5 \frac{3}{4}$ inches long. Will a board that is 10 feet long be enough to make the four shelves?

Answer: Yes, the total length of the shelves is 9.9 feet.

A cabinetmaker has a 12 foot board, how many shelves can be cut from this board if each shelf is 2.25 feet long?

Answer: $12/2.25 = 5.3$ boards, so 5 boards can be cut

A flooring installer is putting down a wood floor in a hallway that is $49 \frac{1}{2}$ inches wide. How many boards will be needed if each board is $2 \frac{1}{4}$ inches wide?

Answer: $49 \frac{1}{2}$ divide by $2 \frac{1}{4} = 22$ boards

A plumber needs five pieces of pipe to make a repair in a home. The length of these five pieces are: $32 \frac{1}{2}$ inches, $10 \frac{1}{4}$ inches, $5 \frac{1}{2}$ inches, $16 \frac{3}{4}$ inches, and 10 inches How long must the pipe be if the plumber will cut all five pieces from the same length of pipe?

Answer: The pipe needs to be 75 inches long or $6 \frac{1}{4}$ feet

A tile installer is placing tiles on a bathroom floor that is $74 \frac{3}{4}$ inches wide. If each tile is 9 inches square, how whole tiles will be needed for cover the width of the floor? What should be the width of the last tile to make it fit?

Answer: 8 whole tiles, the last tile needs to be cut $2 \frac{3}{4}$ inches wide

A contractor is mixing cement for a job. A ratio of cement to sand is 1 to 4. How many shovels of cement should be put into the mixer if 80 shovels of sand are used?

Answer: 20 shovels of cement

A contractor just finished a job with three laborers, working 40 hours each, and the customer was charged \$1,500 for the cost of labor done by these workers. A new job to begin next month is estimated to need five laborers, each working 35 hours each. Based on the charge from the last job, what is the estimate for the labor charge on the next job?

Answer: Last job had 3 workers x 40 hours each = 120 total hours $\$1500/120 = \12.50 per hour. The next job will have 5 workers x 35 hours each = 175 total hours, 175 hours x \$12.50 per hour = \$2187.50 estimated labor charge

An electrician has a special meter that measures the resistance in an electrical line that is expressed in ohms. What is the total resistance, in ohms, of the series if the meter has the following readings: 12.50 ohms, 21.32 ohms, 11.70 ohms

Answer: 45.52 ohms

A building inspector is checking the pipes used in a hospital to carry high pressure steam. The building code requires that the pipes have a wall thickness of not less than .8 cm. The pipe that was installed has an inside diameter of 10.53 cm and an outside diameter of 12.41 cm, will this pipe meet the code requirement? Hint: the thickness of the wall is one-half the difference between the inside and outside diameters.

Answer: Yes, $12.41 - 10.53 = 1.88/2 = .94$ cm

An electrician is checking the design of a solar panel to be sure the material will produce enough electricity. If the material produces 12.5 volts per square meter and the panel is 0.565 meters by 1.78 meters, will this panel be large enough to produce the 12.5 volts that is needed?

Answer: Yes, 12.5 volts x 0.565 meters x 1.78 meters = 12.57125 volts

A carpet layer is putting down a carpet that sells for \$13.75 a square yard. The carpet comes in a width of 4 yards, which is the width of the room. If the room is 5.37 yards long, what is the cost of the carpet?

Answer: 4 yards x 5.37 yards = 21.48 square yards, 21.48 x \$13.75 = \$295.35

A roofer is installing shingles on a building that has two rectangles the each measure 75 feet long and 22 feet wide. If a bundle of shingles will cover 100 square feet, how many bundles will be needed to cover the roof?

Answer: $75 \times 22 = 1650$ square feet for each side, for a total of 3300 square feet, $3300/100 = 33$ bundles of shingles

In the above problem, what will the shingles cost if each bundle sells for \$24.58 each?

Answer: $33 \times \$24.58 = \811.14

A cement mason is pouring a cement sidewalk that is 60 feet long, 2 feet wide, and 4 inches thick. How many cubic yards of cement should be ordered?

Answer: Make sure to change all of the measurements to yards: 60 feet = 20 yards, 2 feet = $\frac{2}{3}$ yards, and 4 inches = $\frac{1}{9}$ yards
 $20 \text{ yards} \times \frac{2}{3} \text{ yards} \times \frac{1}{9} \text{ yards} = 1 \frac{13}{27}$ yards of cement

A carpenter must make brace a garage door by nailing a board diagonally across the door. If the door is 16 feet wide and 7 feet tall, how long is the board that will be used as a brace?

Answer: $(16 \times 16) + (7 \times 7) = 305$, square root is 17.46 feet

A carpenter wants to make sure the opening for a barn door is square. If the opening for the door is 6 feet by 8 feet, what should the diagonals measure to make sure the door opening is square?

Answer: $(6 \times 6) + (8 \times 8) = 100$, square root of 100 is 10 feet, each diagonal should measure 10 feet