



Construction Math

Worksheets

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MATH WORKSHEET #1

Basic operation problems

- Addition Examples

1. What is the total length of a 24ft piece of pipe plus a 6ft flared end section?
2. There is a 24ft pipe that will be spliced with an 8ft section. How many total feet of pipe is there?

- Subtraction Examples

3. You have 105 total #8 bars at the beginning of a project. How many are left after you install 62 of the bars?
4. The total length of a job that needs to be graded is 2.321mi. To date, .381mi have been graded. How many miles need to be graded to finish the job?
5. What is the difference in elevation of a corrugated metal pipe with an inlet elevation of 1034.84' and an outlet elevation of 1033.52'?

- Multiplication Examples

6. One bag of cement must be mixed with 20.9L (liters) of water. How many liters will be needed for 6 bags of cement?
7. 34 tons of asphalt is needed per each station. The job is 50 stations long. How many tons of asphalt is needed for the job?

MATH WORKSHEET #2

Ratio & Fraction Problems

1. Road brine requires 23lbs of salt per 100 gallons of water. How many lbs. of salt are needed if you have 500 gallons of water.
2. In constructing a road bed, for every 60lbs of coarse aggregate there needs to be 30lbs of fine aggregate. What is the ratio of fine to coarse aggregate?
3. One cure drum is $\frac{1}{2}$ full and a second cure drum is $\frac{1}{3}$ full. If you combine them how much of a drum of cure would you have?
4. A gradation test requires $\frac{1}{4}$ lbs. of aggregate. Your sample is $\frac{3}{8}$ lbs. How much do you need to remove to get your gradation weight?
5. Diaphragm forms require $\frac{1}{3}$ of a sheet of plywood. You need to build 6 diaphragms. How many sheets of plywood do you need?
6. You have $\frac{7}{8}$ ton of mulch for a project, and 20 rectangular-shaped areas along the length of the project that need to be covered with mulch. Each rectangular area will use $\frac{1}{16}$ th ton of mulch. How many rectangular areas will you be able to cover?

MATH WORKSHEET #3

Conversion Problems

1. A road bed is 24feet wide 4 miles long. It needs 2 inches of rock. How many cubic yards of rock will that be?
2. Concrete has a unit weight of 4,000lbs/yd³. A culvert head wall contains 2.2 yd³ of concrete. How much does the head wall weigh?
3. Sand has a unit weight of 95lbs/ft³. You have a rock box that has a volume of 240ft³. How many pounds (& tons) of sand will the rock box hold?

MATH WORKSHEET #4

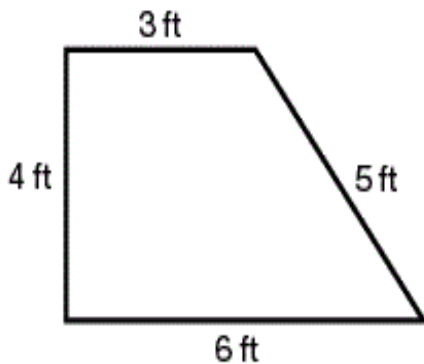
Average Sample Problems

1. The widths of seeding pad in several different locations are 25, 30, 35, 35, 44, 46, and 32 feet. What is the average width of these pads?
2. You have several bars of the following lengths in ft: 68, 70, 71, 72, 73, 74, 76, 78, 80, 81, 82, 83, 85. What is the average length of these bars?
3. Determine the average lane widths for the following lanes: 10, 11, 12, 12, and 10 feet.

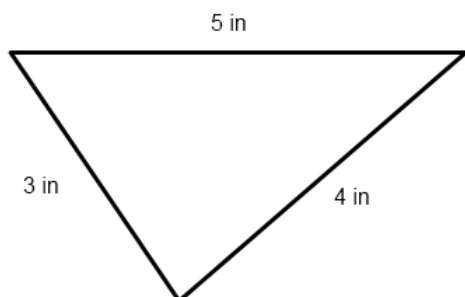
MATH WORKSHEET #5

Perimeter Problems

1.



2.

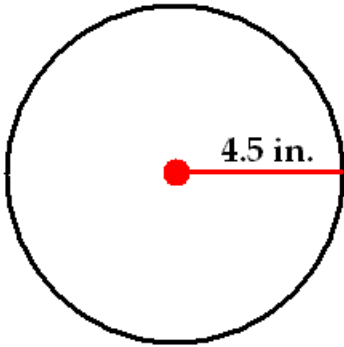


MATH WORKSHEET #6

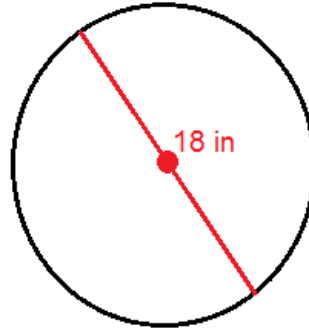
Circumference Problems

Calculate circumferences for the circles below:

1.



2.

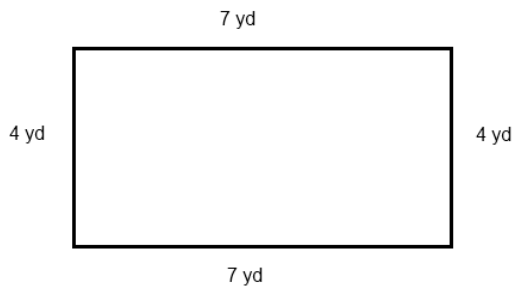


MATH WORKSHEET #7

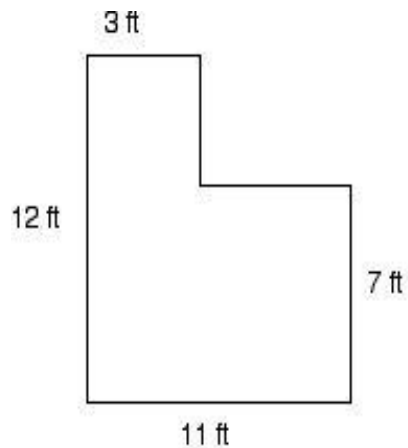
Area Problems

Calculate the areas of the following shapes:

1.



2.



3. Find the area of a triangle whose base is 124.0 feet and whose height is 93.5 feet.

4. A triangular section of ground at a highway interchange is to be seeded. If the base of the triangle is 75 feet and its height is 60 feet, find the area to be seeded to the nearest square foot.

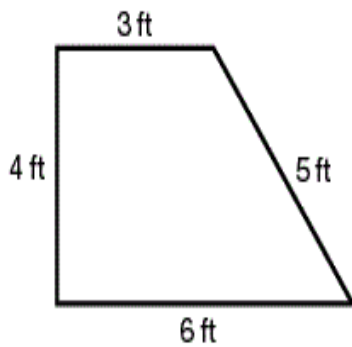
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5. Acme contracting is building a round about with a radius of 250 feet. What is the area that needs to be cleared and grubbed for this round about?

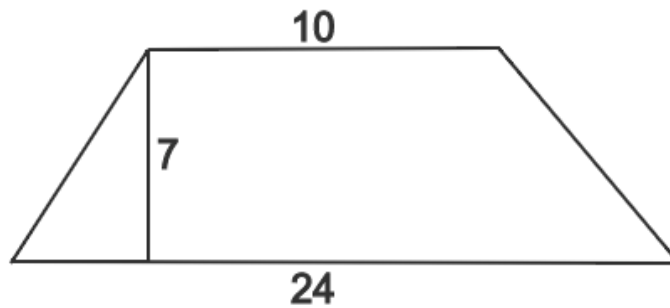
6. A sign has a round base that needs a pad of concrete below the base with a 7 feet radius. What is the area of the pad?

Find the areas of the trapezoids below

7.



8.

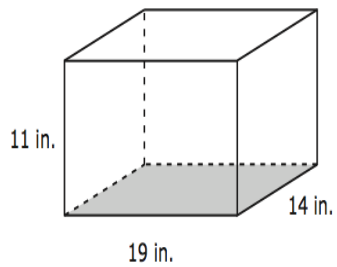


MATH WORKSHEET #8

Volume Problems

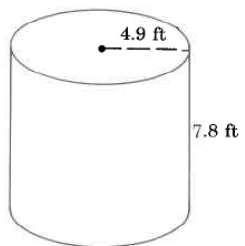
Find the VOLUMES of the objects below:

1.



2. A bridge pier cap is 65 feet long 6 feet wide and 8 feet high. What is the volume?

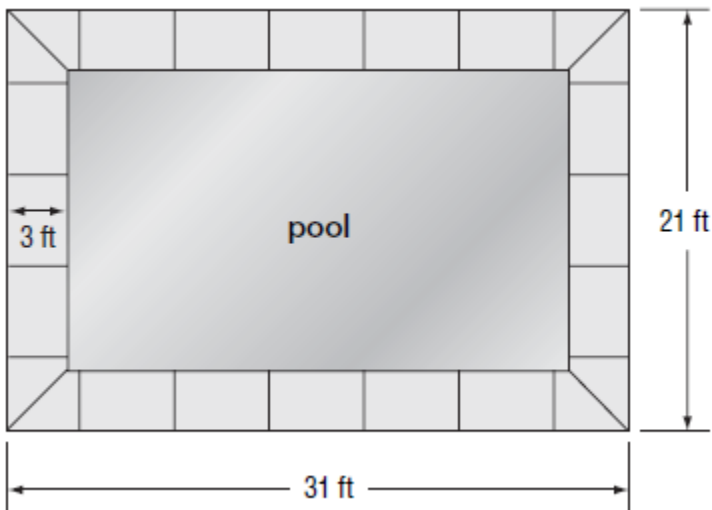
3. Find the volume of the cylinder below



4. Find the volume in ft^3 of a barrel that has a 12in radius and is 34in tall.

WORD PROBLEMS

1. A bulk diesel tank holds 2000 gallons, and is full. Your motor grader holds 110 gallons and is currently $\frac{1}{2}$ full. How many gallons are left in the bulk tank after you fill up your motor grader?
2. Four culvert end markers are needed for each culvert. You have 22 culverts that need markers. How many end markers will you need?
3. A rectangular swimming pool is surrounded by a concrete sidewalk that is 3 feet wide. The dimensions of the rectangle created by the sidewalk are 21 feet by 31 feet.



Find the length and width of the pool.

4. A project manager needs a car 3 days a week. The daily cost of renting a car is \$200. To purchase the car, it costs \$2600, and the daily car expenses are \$50. If the project lasts 52 weeks, would you recommend the manager rent or purchase the car based on these costs alone?
5. A highway had a landslide, where 3,000 cubic yards of material fell on the road, requiring 200 dump truck loads to clear. On another highway, a slide left 40,000 cubic yards on the road. How many dump truck loads would be needed to clear this slide?