Here are the potential test scores on our final exam: 81, 85, 92, 71, 66, 100, 97, 92, 55

Find the following:

Mean: 82.1

Median: 85

Mode: 92

Range: 100 − 55 = 45

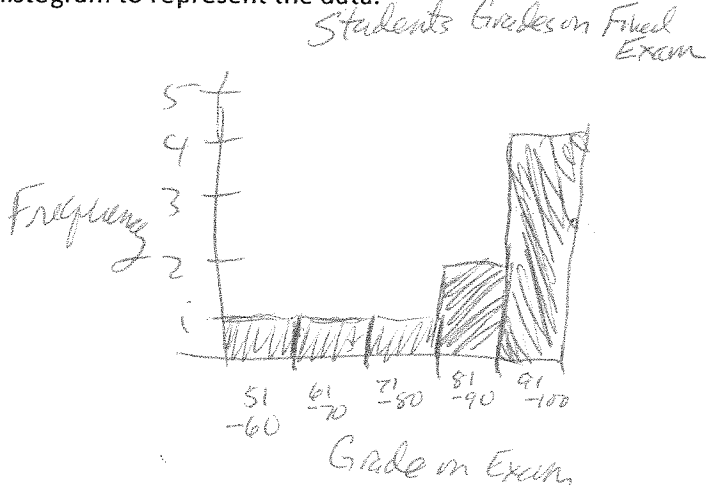
Midrange: $\frac{155}{2} = 77.5$

Standard Deviation: 15.27

Construct a Grouped Frequency Distribution (with 10 as the class width) to represent the data:

Grade	Frequency
91-100	4
81-90	2
71-80	1
61-70	1
51-60	1

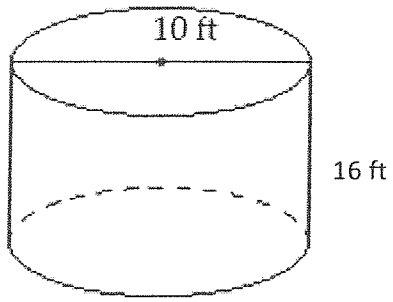
Create a Histogram to represent the data:



Find the volume and surface area of the cylinder. Label your answer.

Volume is $1256.64\ ft^3$

Surface area is $659.73\ ft^2$



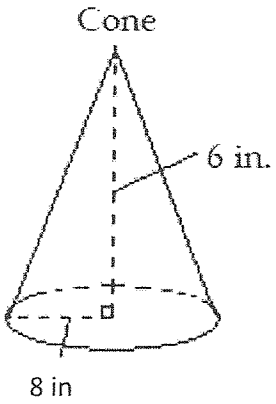
$V = \pi(5)^2(16) \approx 1256.637$

$SA = 2\pi(5)^2 + 2(\pi)(5)(16)$

≈ 659.734

Find the volume of the cone. Label your answer.

Volume is $402.12\ in^3$



$V = \frac{1}{3}\pi(5)^2(6)$

≈ 402.1238

A new pyramid has been found in South America. The pyramid has a rectangular base that measures 78 yd by 100 yd, and has a height of 100 yd. The pyramid is not hollow like the Egyptian pyramids and is composed of layer after layer of cut stone. The stone weighs 468 lb per cubic yard. How many pounds does the pyramid weigh?

$V = \frac{1}{3}Bh = \frac{1}{3}(7800)(100) \approx 260{,}000\ yd^3$

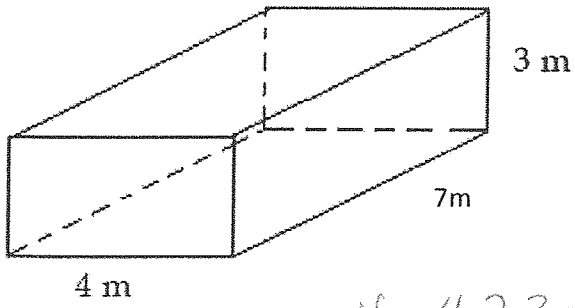
$260{,}000 \cdot 468 =$

$121{,}680{,}000$ lbs

Find the surface area and volume and label your answer.

Surface area = $122\ m^2$

Volume = $84\ m^3$



SA

2 12

12

21

21

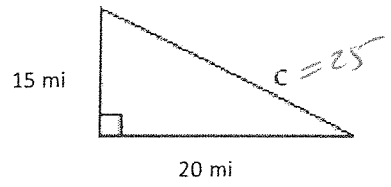
28

28

122

$V = 4 \cdot 7 \cdot 3 = 84\ m^3$

Find the length of the missing side of the triangle. Show your work.



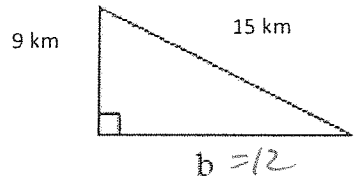
$15^2 + 20^2 = c^2$

$225 + 400 = c^2$

$\sqrt{625} = \sqrt{c^2}$

$25 = c$

Find the length of the missing side of the triangle. Show your work.



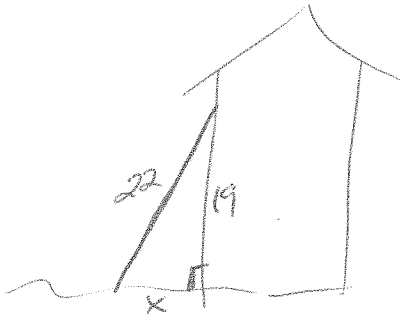
$9^2 + b^2 = 15^2$

$81 + b^2 = 225$

$\sqrt{b^2} = \sqrt{144}$

$b = 12$

Tim and John are leaning a 22-foot ladder against their house. If the ladder reaches 19 feet up the house, how far is the bottom of the ladder from the base of the house. Round to the nearest tenth.



$x^2 + 19^2 = 22^2$

$x^2 + 361 = 484$

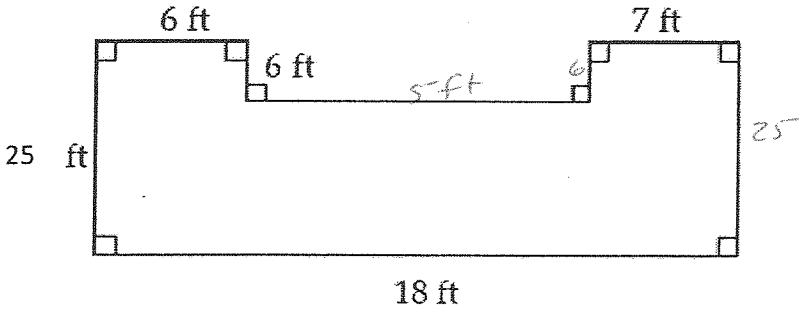
$\sqrt{x^2} = \sqrt{123}$

$x \approx 11.09 \approx 11.1$ feet

Find the perimeter and area of the following figure. Label your answer.

Perimeter is 98 ft

Area is $420\ ft^2$



$A = (25)(18) - (6)(5)$

$= 450 - 30$

$= 420$

Convert the following. You do NOT need to show work in this section.

134 mm to meters — .134 meters

2.14 kilograms to centigrams — 214,000 centigrams

23.4 meters to centimeters — 2,340 centimeters

450 milliliters to liters — .450 liters

Convert the following. **Show your work.**

24 miles to feet

$$24 \text{ miles} \cdot \frac{5280 \text{ ft}}{1 \text{ mile}} = 126,720 \text{ feet}$$

7.2 liters to quarts

$$7.2 \text{ liters} \cdot \frac{1 \text{ quart}}{.946 \text{ liter}} \approx 7.61 \text{ quarts}$$

6.3 inches to centimeters

$$6.3 \text{ inches} \cdot \frac{2.54 \text{ cm}}{1 \text{ inch}} = 16.002 \text{ cm}$$

251 centimeters to feet

$$251 \text{ cm} \cdot \frac{1 \text{ ft}}{30.48 \text{ cm}} \approx 8.23 \text{ ft}$$

45 feet per second to miles per hour

$$\frac{45 \text{ feet}}{\text{sec}} \cdot \frac{3600 \text{ sec}}{1 \text{ hour}} \cdot \frac{1 \text{ mile}}{5280 \text{ ft}} \approx 30.68 \frac{\text{miles}}{\text{hour}}$$

Volume of Cylinder: $V = \pi r^2 h$

Volume of Cone: $V = \frac{1}{3}\pi r^2 h$

Volume of Pyramid: $V = \frac{1}{3}Bh$

Area of Trapezoid: $A = (\frac{b_1+b_2}{2})h$

Simple Interest: $I = Prt$ (P is principal, r is the annual interest rate as a decimal, t is time in years)

Calculating the amount for compound interest paid n times per year: $A = P(1 + \frac{r}{n})^{nt}$

Calculating the amount for compounding continuously: $A = Pe^{rt}$

Loan Payment Formula (for homes, cars, etc.) You can also use the APPS on your Graphing Calculator.

$$PMT = \frac{P(\frac{r}{n})}{[1 - (1 + \frac{r}{n})^{-nt}]}$$

You invest $2,000 into an account that pays 6%, compounded monthly. How much would the investment be worth in 20 years?

$2000(1 + \frac{.06}{12})^{12 \cdot 20} \approx$ $6,620.41

You invest $3,000 into an account that pays 5.5%, compounded continuously. How much would the investment be worth in 10 years?

$3000e^{.055 \cdot 10} \approx$ $5,199.76

You invest $5,000 into an account that pays 6%, compounded quarterly. How much would the investment be worth in 20 years?

$5,000(1 + \frac{.06}{4})^{4 \cdot 20} =$ $16,453.31

You buy a house for $200,000 and make a down payment of $20,000 and need to finance the rest at a 5.25% annual interest rate. What would your monthly payments be if the loan is for 30 years?

N = 360
I% = 5.25
PV = 180,000
P/y = 12 C/y = 12

} Put cursor on PMT, [Alpha] [Enter] solve = $993.97 or use

You buy a car for $12,000 and make no down payment. You finance it at a 6% annual interest rate. What would your monthly payments be if you paid it off in 3 years?

N = 36
I% = 6
PV = 12,000
P/y = 12 C/y = 12

PMT = $365.06

You lend a friend $500 and ask him to pay you back in 2 years at 8% simple interest. How much interest are you charging and how much does your friend need to pay you back?

$I = Prt$
$I = 500(.08)(2) =$ $80 → interest

$580 is amount to pay back

You borrow $800 from a cousin and have to pay her back $1,016 in 3 years. If she is using simple interest, what interest rate is she charging?

1016
−800
216

$I = Prt$
$216 = 800(r)(3)$
$\frac{216}{2400} = \frac{2400r}{2400}$
$r = .09$

So, 9% is interest rate