

## Story problems

Name \_\_\_\_\_

Research and development is critical to a company's success and ability to stay competitive. In the 1930s, Caterpillar spent about \$1 million on research and development and was granted 127 patents. This number grew each year. In the 2000s, Caterpillar spent \$1 billion and was granted 2,217 patents.

How much more money was spent on research and development in the 2000s than in the 1930s?

How many more patents were granted?

**Answer:**  $1B - 1M =$  nine hundred ninety nine million / 2090 more patents were granted in the 2000s



The 988K Wheel Loader has a 12.5-ton rated payload capacity.  
The 990H has a 16.5-ton rated payload capacity.

How many more tons can the 990H move than the 988K? How many more pounds?  
(2,000 pounds = 1 ton)

**Answer:**  $16.5\text{-ton} - 12.5\text{-ton} = 4.0\text{-ton} / 4\text{ tons} \times 2,000\text{ lbs.} = 8,000\text{ lbs.}$



A ton of bricks weighs 2,000 pounds. The 740B Articulated Truck has a 42-ton payload capacity.

How many more 2,000 pound loads can the truck carry at one time?  
(2,000 pounds = 1 ton)

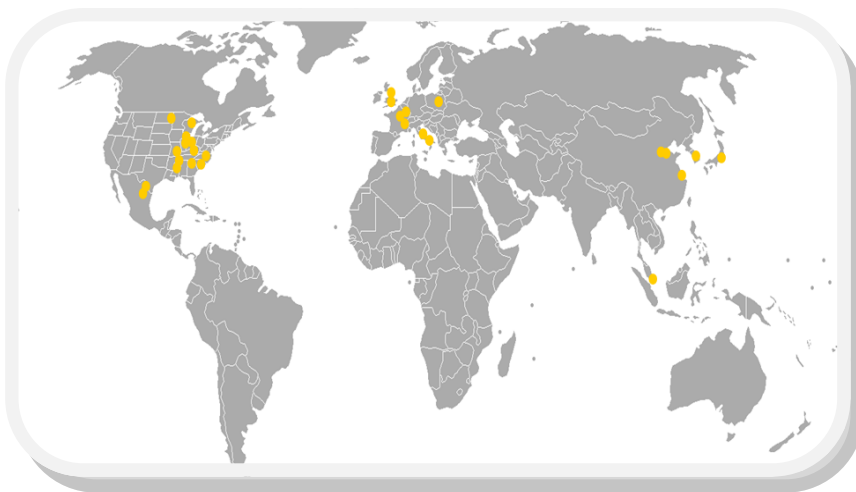
**Answer:** The 740B could carry 41 additional 2,000 lb. loads at one time.

Remanufacturing is the process of returning end-of-life products to the same condition as when that product was originally manufactured. Products are returned to the original “same as new” condition or sometimes in better condition in terms of durability, life span and performance.

Cat® Reman has 17 different remanufacturing facilities around the world. Cat Reman took back 174 million pounds of end-of-life material in 2013. That means that they either recycled or remanufactured 174 million pounds of material in 2013.

If Cat Reman continued to take back 174 million pounds a year over the next 10 years how many pounds of material would that be?

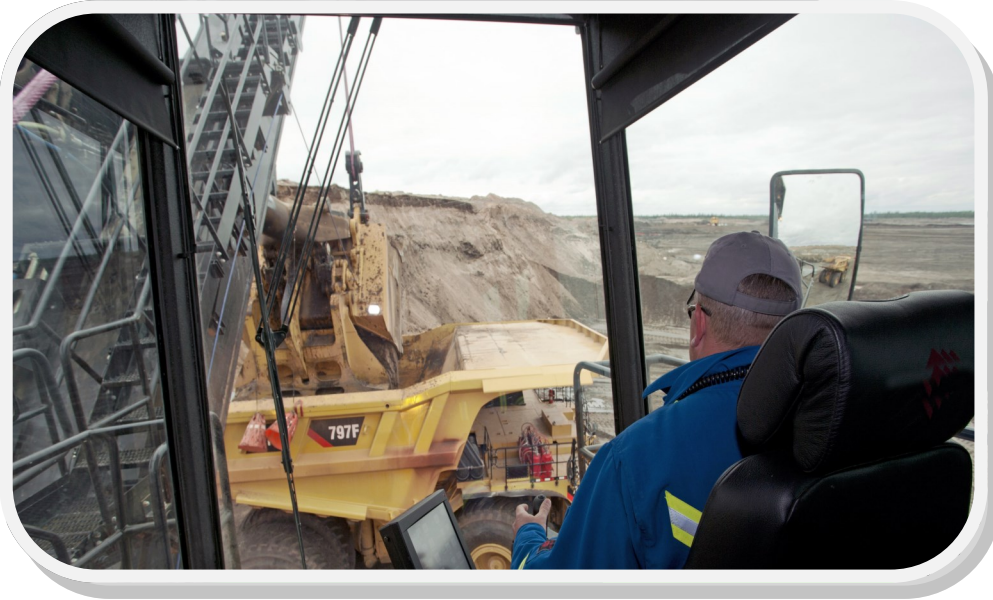
**Answer:** 148M lbs. x 10 yrs. = \$1,480,000



If a man weighs 200 pounds and the 797F Mining Truck can haul 400 tons of material, how many men could the 797F haul?

(10 men at 200 pounds each is equal to 1 ton or 2,000 pounds)

**Answer:** 400 tons x 10 men = \$4,000 men



Equipment on a mine site will run 24 hours a day, 7 days a week, 365 days a year.

How many hours a year will the equipment run?

**Answer:** 24 hrs. in one day x 365 days in one yr. = 8,760 hrs. a yr.

1925

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The Caterpillar Tractor Company was formed in 1925. In 1986, Caterpillar Tractor Company changed its name to Caterpillar Inc. to better represent its diverse portfolio of products.

How many years was Caterpillar known as Caterpillar Tractor Company?

**Answer:** 1986—1925 = 61 yrs.



In 1928 the price to purchase a Caterpillar Model Twenty was \$2,175. A canopy would cost an additional \$35. What would the total cost be to purchase the tractor and the canopy?

**Answer:**  $\$2,175 + \$35 = \$2,210$



The operating weight of the 7495 Electric Rope Shovel is 3,047,670 pounds.  
The operating weight of the 7395 Electric Rope Shovel is 2,600,000 pounds.

How much less is the operating weight of the 7395 Electric Rope Shovel than the 7495 Electric Rope Shovel?

**Answer:**  $3,047,670 - 2,600,000 = 447,670$  lbs.