

Percent Proportions

Name: Key

- ① A person standing on the moon would weigh 16% of his weight on Earth. If Astro Knot weighs 150 lb on Earth, how much would he weigh on the moon?

24 lb

$$\frac{M}{E} = \frac{16}{100} = \frac{\quad}{150}$$

cross products scaling

$$\frac{16}{100} = \frac{M}{150}$$

$$16(150) = 100M$$

$$2400 = 100M$$

$$2400 \div 100 = M$$

$$24 = M$$

- ② There are 7 oz of sugar in a 16-oz box of Honey Hunks Cereal. What percent of Honey Hunks Cereal is sugar? (Round to the nearest percent.)

44%

$$\frac{\text{Sugar}}{\text{box}} = \frac{7}{16} = \frac{P}{100}$$

cross products

$$7(100) = 16P$$

$$700 \div 16 = P$$

$$43.75 = P$$

$$44\% = P$$

$$16 \overline{) 700.00}$$

$$\underline{-64} $$

$$60 $$

$$\underline{-48} $$

$$120 $$

$$\underline{-112} $$

$$80 $$

- ③ A salesman keeps 20% of his sales as a commission. How much does he have to sell to earn \$1,000?

\$5,000

$$\frac{\text{Comm}}{\text{Sales}} = \frac{20}{100} = \frac{1000}{\text{Sales}}$$

cross products scaling

$$100(1000) = 20S$$

$$100000 \div 20 = S$$

$$\$5000 = S$$

$$\frac{20}{100} = \frac{1000}{S}$$

$$\frac{1}{5} = \frac{1000}{S}$$

$$S = 5000$$

- ④ The regular price of an FX-1 electronic keyboard at Circuit Circus is \$200. It is on sale at a 25% discount. What is the sale price?

\$150

$$\frac{\text{sale}}{\text{reg}} = \frac{25}{100} = \frac{\text{discount}}{200}$$

cross product scale up

$$\frac{25}{100} = \frac{\text{dis}}{200}$$

$$25(200) = 100 \text{ dis}$$

$$5000 \div 100 = \text{dis}$$

$$50 = \text{discount}$$

$$\text{sale price} = 200$$

$$200 - 50 = 150$$

$$\frac{25}{100} = \frac{50}{200}$$

$$\frac{25 \times 2}{100 \times 2} = \frac{50}{200}$$

- ⑤ A baseball player got 10 hits in 39 times at bat. What percent of his times at bat did he get a hit? (Round to the nearest percent.)

26%

$$\frac{\text{hits}}{\text{bats}} = \frac{10}{39} = \frac{P}{100}$$

$$\frac{1000}{39} = P$$

$$25.6\% \approx P$$

$$39 \overline{) 1000.00}$$

$$\underline{-78} $$

$$220 $$

$$\underline{-195} $$

$$250 $$

$$\underline{-234} $$

$$16 $$

- ⑥ A math class has studied the first 330 pages of their textbook. If this is 75% of the entire book, how many pages are in the book?

440

$$\frac{S}{\text{total}} = \frac{330}{T} = \frac{75}{100}$$

cross products scaling

$$330(100) = 75T$$

$$33000 \div 75 = T$$

$$440 = T$$

$$\frac{330}{T} = \frac{75}{100}$$

$$\frac{330 \times 4}{T \times 4} = \frac{3}{4}$$

$$T = 440$$

7) The tallest man ever recorded was Robert Wadlow, who was 272 cm tall. The tallest woman on record was Zeng Jinlian. Her height was 91% of Wadlow's height. How tall was Zeng Jinlian? (Round to the nearest cm.)

$$\frac{91}{100} = \frac{\text{Zeng}}{272}$$

$$91(272) = 100Z$$

$$24,752 \div 100 = Z$$

$$247.52 = Z$$

248 cm

8) A color called "Passion Purple" is made by mixing 5 oz of red paint with 9 oz of blue paint. What percent of Passion Purple is blue paint? (Round to the nearest percent.)

64%

Passion purple = 5oz + 9oz = 14oz total

$$\frac{b}{a} = \frac{9}{14} = \frac{P}{100}$$

$$9(100) = 14P$$

$$900 \div 14 = P$$

$$64.2 = P$$

$$14 \overline{) 900.00}$$

$$\underline{-84} $$

$$60$$

$$\underline{-56}$$

$$40$$

$$\underline{-28}$$

$$120$$

9) The height of a model rocket is 4% of the height of the actual rocket. The model is 1.8 m high. How high is the actual rocket?

$$\frac{m}{a} = \frac{4}{100} = \frac{1.8}{a}$$

$$4a = 180$$

$$a = 180 \div 4$$

$$a = 45$$

45 m

$$4 \overline{) 180}$$

$$\underline{-16} $$

$$20$$

10) Jennifer's new bike cost \$180. Her parents paid 40% of the cost and Jennifer paid the rest. How much did Jennifer pay?

$$\frac{40}{100} = \frac{\text{Parents paid}}{180}$$

or Jenn paid 60%

$$\frac{60}{100} = \frac{\text{Jenn}}{180}$$

$$6(180) = 10 \text{ Jenn}$$

$$1080 \div 10 = \text{Jenn}$$

$$\$108 = \text{Jenn}$$

\$ 108

11) In a poll two weeks before the Presidential election, 37% of the people said they would vote for the Democrat, 42% said they would vote for the Republican, and the rest were undecided. What percent were undecided?

no prop needed

Dem	=	37	
Rep	=	42	100
+ Undecided	=	x	<u>- 79</u>
total	=	100%	21%

Answer Bank

- (3) 5,000
- (4) 150
- (5) 26
- (6) 440
- (7) 248
- (8) 64
- (9) 45
- (10) 108
- (11) 21
- (1) 24
- (2) 44