12.1 & 12.2 Word Problems

1-22-18

Jan 20-10:40 AM

Jack's father rented a car while they were on vacation. He paid a rental fee of $20.00 per day, plus [illegible] a mile. He paid $25.00 for mileage and his total bill for renting the car was $165.00. For how many days did he rent the car?

Let d represent the number of days he rented the car.

$$20d + 25 = 165$$
$$-25 \quad -25$$
$$\frac{20d}{20} = \frac{140}{20}$$
$$d = 7 \text{ days}$$

Jan 20-10:42 AM

Let d represent the number of days he rented the car.

$20d + 25 = 165$

$-25 \quad -25$ *Subtract 25 from both sides.*

$20d = 140$

$\frac{20d}{20} = \frac{140}{20}$ *Divide both sides by 20.*

$d = 7$

Jack's father rented the car for 7 days.

Jan 20-10:43 AM

Last Sunday, the Humane Society had a 3-hour adoption clinic. During the week the clinic is open for 2 hours on days when volunteers are available. If the Humane Society was open for a total of 9 hours last week, how many weekdays was the clinic open?

x = # of weekdays

$3 + 2x = 9$

$-3 \quad -3$

$\frac{2x}{2} = \frac{6}{2}$

$x = 3$ wkdys

Jan 20-10:43 AM

An electrician charges $50 to come to your house.He also charges $25 for each hour he spends at your house. The electrician charges you a total of $125. How many hours did he spend at your house?

x = # hours

$50 + 25x = 125$

$-50 \quad -50$

$\frac{25x}{25} = \frac{75}{25}$

$x = 3$ hrs.

Jan 23-8:38 AM

Jo eats 2,200 calories per day. She eats 450 calories at breakfast and twice as many at lunch. If she eats three meals with no snacks, which meal will contain the most calories?

lunch x = dinner cal.

$450 + 900 + x = 2200$

$1350 + x = 2200$

$-1350 \quad -1350$

$x = 850$ cal.

Jan 20-10:46 AM

Erika is following a 2,200 calorie-per-day diet. She eats the recommended 9 servings of breads and cereals, averaging 120 calories per serving. She also eats 5 servings of vegetables. If the rest of her daily intake is 870 calories, what is the average number of calories in each serving of vegetables?

x = cal. in veggies

$120(9)+5x+870=2200$

$1080+5x+870=2200$

$1950+5x=2200$

$-1950 \quad -1950$

$\frac{5x}{5}=\frac{250}{5}$

$x=50$ cal.

Jan 20-10:46 AM

John is twice as old as Helen. Subtracting 4 from John's age and then dividing by 2 gives William's age. If William is 24, how old is Helen?

h = Helen's age

$2\cdot\frac{2h-4}{2}=24\cdot 2$

$2h-4=48$

$+4 \quad +4$

$\frac{2h}{2}=\frac{52}{2}$

$h=26$ years old

Jan 20-11:21 AM

$$\frac{2h-4}{2} = 24$$

$(2)\ \frac{2h-4}{2} = (2)24$ *Multiply both sides by 2.*

$2h - 4 = 48$

$2h - 4 + 4 = 48 + 4$ *Add 4 to both sides.*

$2h = 52$

$\frac{2h}{2} = \frac{52}{2}$ *Divide both sides by 2.*

$h = 26$

Helen is 26 years old.

Jan 20-11:21 AM

Jose ran twice as many kilometers as Karen. Adding 8 to the number of kilometers Jose ran and dividing by 4 gives the number of kilometers Maria ran. Maria ran 3 kilometers. How many kilometers did Karen run?

k = Karen's Km

$4 \cdot \frac{2k+8}{4} = 3 \cdot 4$

$2k + 8 = 12$

$-8 \quad -8$

$\frac{2k}{2} = \frac{4}{2}$

$k = 2$ Km

Jan 20-11:18 AM

Kelly swam 4 times as many laps as Kathy. Adding 5 to the number of laps Kelly swam gives you the number of laps Julie swam. If Julie swam 9 laps, how many did Kathy swim?

x = Kathy's laps

$4x + 5 = 9$

$-5 \quad -5$

$4x = 4$

$\frac{4x}{4} = \frac{4}{4}$

$x = 1$ lap

Jan 23-8:42 AM

12.3 Word Problems

1-23-18

Jan 20-11:21 AM

Christine can buy a new snowboard for $136.50. She will still need to rent boots for $8.50 a day. She can rent a snowboard and boots for $18.25 a day. How many days would Christine need to rent both the snowboard and the boots to pay as much as she would if she buys the snowboard and rents only the boots for the season?

Jan 20-11:57 AM

Let d represent the number of days.

$$18.25d = 136.5 + 8.5d$$

$$18.25d - 8.5d = 136.5 + 8.5d - 8.5d$$ *Subtract 8.5d from both sides.*

$$9.75d = 136.5$$ *Simplify.*

$$\frac{9.75d}{9.75} = \frac{136.5}{9.75}$$ *Divide both sides by 9.75.*

$$d = 14$$

Christine would need to rent both the snowboard and the boots for 14 days to pay as much as she would have if she had bought the snowboard and rented only the boots.

Jan 20-11:59 AM

Mary can purchase ice skates for $57 and then pay a $6 entry fee at the ice skating rink. She can also rent skates there for $3 and pay the entry fee. How many times must Mary skate to pay the same amount whether she purchases or rents the skates?

Jan 20-11:59 AM

Five added to twice Erik's age is the same as 3 times his age minus 2. How old is Erik?

Jan 20-12:01 PM

Three times the perimeter of a triangle is the same as 75 decreased by twice the perimeter. What is the perimeter of the triangle?

Jan 20-12:01 PM

To repair body damage on a car, AutoBody charges $125, plus $18 per hour. CarCare charges $200, plus $12 per hour. Determine the number of hours for which the two body shops will cost the same.

Jan 20-12:02 PM

Sandy and Suzanne are planting flower pots around the school building. Sandy has planted 33 pots and is planting at the rate of 10 pots per hour. Suzanne has planted 25 pots and is planting at the rate of 14 pots per hour. In how many hours will they have planted the same number of flower pots?

Jan 20-12:02 PM

Louisa used Downtown Taxi, which charges $2 for the first mile and $1.10 for each additional mile. Pietro used Uptown Cab, which charges $5 for the first mile and $0.95 for each additional mile. They paid the same amount and traveled the same distance. How far did they travel?

Jan 20-12:02 PM

The length of the sides of a square measure $2x - 5$. The length of a rectangle measures $2x$, and the width measures $x + 2$. For what value of x is the perimeter of the square the same as the perimeter of the rectangle?

Jan 20-12:02 PM