1 Tom sells iPads at the Apple Store. He earns $150 a week plus $25 for every iPad he sells. Tom earned $525 last week.

Write an equation that can be used to determine the number of iPads Tom sold last week. Be sure to define the variable in your equation.

Part A

Define the variable Let p = the number of iPads Tom sold last week

Equation 25p + 150 = 525

Part B

How many iPads did Tom sell last week?

Show All Work

$25p + 150 = 525$

$25p + 150 - 150 = 525 - 150$

$\frac{25p}{25} = \frac{375}{25}$

$p = 15$

Answer 15 **iPads**

Part C

This week, Tom sold 40% more iPads than last week. How many iPads did Tom sell this week?

Show All Week

40% of 15

0.40 x 15 = 6 more iPads

15 + 6 = 21 iPads

Answer 21 iPads

2 A student claims that the following expression is equivalent to 16x.

The student's steps are shown.

Expression: 4x + 3(5x - 2) + (2x + 3)

Step 1: 4x + 15x - 2 + 2x + 3

Step 2: 4x + 15x + 2x - 2 + 3

Step 3: 21x - 5

Step 4: 16x

Part A

Describe all errors in the student's work.

In step 2, when using the distributive property the student did not multiply the 3 by -2. In step 3, they added -2 and 3 to get -5. In step 4, they combined unlike terms 21x and -5 to get 16x.

Part B

If all of the errors in the student's work are corrected, what will be the final answer.

Show All Work

4x + 3(5x-2) + (2x + 3)

4x + 15x - 6 + 2x + 3

21x - 6 + 3

21x - 3

Answer 21x - 3

3 A worker has to drive her car as part of her job. She receives money from her company to pay for the gas she uses. The table shows a proportional relationship between, y, the amount of money that the worker receives, and x, the number of work-related miles driven.

Mileage Rates

Distance Driven, x (miles)	Amount of Money Received, y (dollars)
25	12.75
35	17.85
40	20.40
50	25.50

Part A

Explain how to compute the amount of money the worker receives for any number of work-related miles.

Multiply the number of work-related miles driven (x) by $0.51 per mile to get the amount of money that the worker receives (y).

Part B

Based on the above explanation, write an equation that can be used to determine the total amount of money (y) the worker receives for driving (x) work-related miles.

Equation y = 0.51x

Part C

On Monday, the worker drove a total of 134 work-related and personal miles. She received $32.13 for the work-related miles she drove on Monday.

What percent of her total miles driven were work-related on Monday?

Show All Work

$32.13 ÷ $0.51 = 63 work-related miles

$$\frac{n}{100} = \frac{63}{134}$$

$$\frac{134n}{134} = \frac{6300}{134}$$

$$n = 47.0\%$$

Answer 47.0 **%**

4 The car salesman, Ben, sold 65 cars in January and 78 cars in February. What percent did the car sales increase from January to February?

Part A

Show All Work

$$65 \longrightarrow 78$$

$$\frac{i}{100} = \frac{13}{65}$$

$$\frac{65i}{65} = \frac{1300}{65}$$

$$i = 20\%i$$

Answer 20%i

Part B

In March, Ben set a goal of increasing his car sales by 10%. How many cars is Ben planing to sell in March?

10% of 78

0.10 x 78 = 7.8

8 + 78 = 86 cars

Answer 86 cars

5 **Part A**

The original price of 1 pair of blue jeans at clothing store A is $25.
Clothing store A is using the sale described below for its blue jeans.

Buy 1 pair and get the 2nd pair 30% off the original price.

How much would it cost to buy 2 pairs of blue jeans at clothing store A.
Include an 8% sales tax.
Show All Work

30% of $25
0.30 x 25 = $7.50

$25 - $7.50 = $17.50
$25 + $17.50 = $42.50

8% of $42.50
0.08 x $42.50 = $3.40
$42.50 + $3.40 = $45.90

Answer $ $42.50

Part B

The original price of 1 pair of blue jeans at clothing store B is also $25.
Clothing store B has the same jeans on sale for 20% off each pair.

Determine which store offers the lower price for 2 pairs of jeans. Be sure to justify your answer by stating the total cost of the jeans at both stores.
Include an 8% sales tax.
Show All Work

20% of $25
0.20 x 25 = $5

$25 - $5 = $20
$20 x 2 = $40

8% of $40
0.08 x $40 = $3.20
$40 + $3.20 $43.20

The sale at Store B for 2 pairs of jeans at $43.20 is a better deal than Store A for 2 pairs of jeans at $45.90.