Word Problems

Name: <u>Answers</u>

1. A family moves from Chicago to Saskatoon. A company that rents moving trucks uses this formula, C = 1.15 [21.95d + 0.035 (k – 120)], to determine the cost, including tax, of renting a truck for d days and k kilometers, when k > 120. The distance from Chicago to Saskatoon is 2400 km and the family travels for 4 days. What is the cost to rent the truck?

$C = 1.15 [21.95 (4) + 0.035 (2400 - 120)]$

$C = 1.15 [87.8 + 79.8]$

$C = 1.15 [167.6]$ $\qquad$ $C = 192.74$ $\boxed{\$ 192.74}$

2. Use this formula to convert each Fahrenheit temperature below to Celsius:

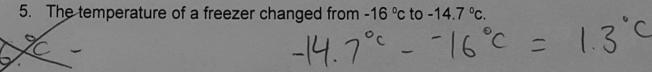| i) 0°F	ii) -40°F	iii) -53°F
$C = \dfrac{F - 32}{1.8}$	$C = \dfrac{-40 - 32}{1.8}$	$C = \dfrac{-53 - 32}{1.8}$
$C = \dfrac{-32}{8} = -17.7\,°C$	$= -40\,°C$	$C = \dfrac{-95}{1.8}$ $C = -52.8\,°C$

3. On Tuesday, Dec. 23rd, the loweste temperature in Winnipeg was -13.4°c. By noon the next day, the temperature had increased by 5.7 °c.
a) What was the temperature at noon?

$-13.4 + 5.7 = -19.4\,°C$ $\boxed{7.7\,°C}$

b) On Wednesday, Dec. 24th, the lowest temperature was 3.7 °c less than the lowest the previous day. What was the lowest temperature on Wednesday?

$-13.4 - 3.7 = -17.1$

4. The lowest point on land in North America is Death Valley at 86m below sea level. The hightest point is the peak of Mt. McKinley at 6193.7 m above sea level. How can you use rational numbers to calculate the distance between these two points?

$6193.7\,m - {}^-86\,m = 6279.7$

5. The temperature of a freezer changed from -16 °c to -14.7 °c.

$-14.7\,°C - {}^-16\,°C = 1.3\,°C$

a) By how much did the temperature change?

$$-1.3\,°C$$

By how much does the temperature need to chance again before it is at -3.8 °c?

$$-14.7\,°C \rightarrow -3.8\,°C \qquad -3.8\,°C - -14.7\,°C = 10.9\,°C$$

6. a) The price of a share in Petro-Canada changed by -$0.80. A person owns 120 shares. By how much did the shares change in value that day?

$$120 \times {}^-0.8 = -96 \qquad \boxed{\$96}$$

b) The price of a share in Research-In-Motion (RIM) changed by -$2.10. If a person owns 50 shares, how much did the share change in value that day?

$$50 \times {}^-2.10 = \$110\!\!\!/ \boxed{-\$105}$$

c) The price of a share in Shoppers Drug Mart changed by $0.35. If a person owns 65 shares, how much did the share change in value that day?

$$65 \times 0.35 = \$22.75$$

7. A thermometer on a freezer is set at -5.5 °c. Each time the freezer door is opened, the temperature increases by 0.3 °c. Suppose there is a power outage. How many times can the door be opened before the temperature of the freezer increases to 5 °c. Show your work.

$$5\,°C - {}^-5.5\,°C = 10.5\,°C$$

$$10.5\,°C \div 0.3 = \boxed{35 \text{ door openings}}$$

8. To pay for a skiing holiday in Whistler, Paige borrows $1450.50 from her parents. She pays back $30.75 each week.

How many weeks will it be until Paige is no longer in debt? Show your work.

$$\$1450.50 \div \$30.75 = 47.2$$

After 48 weeks Paige will no longer be in debt. At 47 weeks she would still owe $~~~~~~$ $5.25