Dec 10

Unit 4 - Using Equations to Solve Word Problems

Uniform Motion Section 7.11 Pages 376-377	Distance Formula (distance triangle) **D = ST** Solving for **Speed** and **Time** Using **Distance Charts** to Solve Word problems **Activity: Study Information & Inquire; Pg 376 1-3** **Classwork: Pg 377** - 1, 3, 5, 7, 9, 12, 17, 19, 21, 23, 24, 26 **Homework: Pg 377** - 2, 4, 6, 8, 10, 13, 14,15, 18, 20, 22, 25, 27, 28; **handout sheet.** **Each section may include homework handouts.**

The Distance Triangle

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Inquiry:From the textbook -- Page 376 # 1 - 3 (Hint: Open your texts)

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Classwork: Pg. 377

Calculate the distance travelled.

1. 3 h at 60 km/h

$D = ST$
$D = 60 \times 3$
$D = 180\text{km}$

3. $\frac{1}{2}$ h at 90 km/h

$D = ST$
$D = 90(0.5)$
$D = 45\text{km}$

How long does each trip take?

5. 40 km at 80 km/h

$t = \frac{D}{S}$
$t = \frac{80}{40} = 2\text{h}$

7. 20 km at 100 km/h

$t = \frac{D}{S}$
$t = \frac{20}{100} = 0.2\text{h}$
$0.2 \times 60 = 12\text{min}$

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Calculate each speed.

9. 300 km in 3 h

$S = \frac{D}{T}$

$S = \frac{300}{3}$

$S = 100 \text{ km/h}$

12. 40 km in $\frac{1}{2}$ h

$S = \frac{D}{T}$

$S = \frac{40}{0.5}$

$S = 80 \text{ km/h}$

Speed

Copy and complete the table.

	Distance (km)	Rate (km/h)	Time (h)
17.	90x+1	90	x + 1
19.	200	x	$\frac{200}{x}$
21.	rxt	r	t
23.	D	$\frac{D}{t}$	t

Distance Triangle

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24. Sailing times A cruise ship left Halifax for Bermuda at 20 km/h. A private boat left for Bermuda 1 h later and travelled at 25 km/h. After how long did the private boat overtake the cruise ship?

Given: Distance = Speed × Time

private boat: $25(x-1)$, 25 km/h, $x-1$

cruise ship: $20x$, 20 km/h, x

Find: how long does it take private boat to overtake the cruise

Let x = time for cruise boat

then $x-1$ = private boat's time

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26. Driving times Two friends, Elsa in Winnipeg and Gina in Edmonton, decided to meet on the Trans-Canada Highway. The distance from Edmonton to Winnipeg is 1360 km. They both left home at 08:00, Winnipeg time. Elsa drove at 80 km/h, and Gina drove at 90 km/h.

a) Make a table showing the total distance driven by each person by 09:00, 10:00, and so on, Winnipeg time. Use the table to find how many hours the friends drove until they met.

b) Find the number of hours they drove by writing and solving an equation.

c) Which problem solving method do you prefer? Explain.

Let x = the time for both

Find how long does it take them to meet

Elsa

Gina

Distance

80x

90x

1360

Speed Time

80km/h x

90km/h x

Homework p. 377

Distance Problems