Ch 3.6 Problem solving Day 1

1 EXAMPLE **Defining One Variable in Terms of Another**

Geometry The length of a rectangle is 6 in. more than its width. The perimeter of the rectangle is 24 in. What is the length of the rectangle?

length =

width =

perimeter = length + width + length + width

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1 The width of a rectangle is 2 cm less than its length. The perimeter of the rectangle is 16 cm. What is the length of the rectangle?

length = width =

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2 EXAMPLE **Consecutive Integer Problem**

The sum of three consecutive integers is 147. Find the integers.

Define Let n = the first integer.
Then $n + 1$ = the second integer,
and $n + 2$ = the third integer.

Relate	first integer	plus	second integer	plus	third integer	is	147
Write	n	+	$n + 1$	+	$n + 2$	=	147

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Ex2b) The ***sum*** of ***three*** consecutive ***even*** numbers is 42. What are the numbers?

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Ex2c) The ***sum*** of ***four consecutive odd*** numbers is 64. What are they?

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2 The sum of three consecutive integers is 48.

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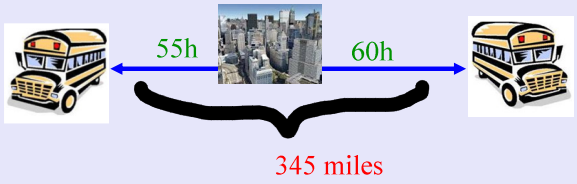
Distance-Rate-Time Problems

Day 2

distance = rate x time

Ex 3a. Two buses leave Toledo at the same time and travel in opposite directions. One bus averages 55 mph and the other is 60 mph. After how many hours will the buses be 345 miles apart?



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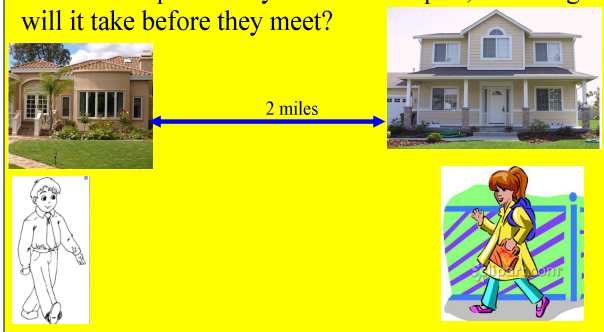
Ex3b) Bill begins walking towards Sally's house at a rate of 3 mph and Sally's is walking towards Bill's house at 2 mph. If they live 2 miles apart, how long will it take before they meet?



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3 EXAMPLE Same-Direction Travel

Engineering A train leaves a train station at 1 P.M. It travels at an average rate of 72 mi/h. A high-speed train leaves the same station an hour later. It travels at an average rate of 90 mi/h. The second train follows the same route as the first train on a track parallel to the first. In how many hours will the second train catch up with the first train?

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3 A group of campers and one group leader left a campsite in a canoe. They traveled at an average rate of 10 km/h. Two hours later, the other group leader left the campsite in a motorboat. He traveled at an average rate of 22 km/h.

a. How long after the canoe left the campsite did the motorboat catch up with it?

b. How long did the motorboat travel?

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4 EXAMPLE Round-Trip Travel

Noya drives into the city to buy a software program at a computer store. Because of traffic conditions, she averages only 15 mi/h. On her drive home she averages 35 mi/h. If the total travel time is 2 hours, how long does it take her to drive to the computer store?

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Ex5) Opposite direction Travel

Jane and Peter leave their home traveling in opposite directions on a straight road. Peter drives 15 mph faster than Jane. After 3 hours they're 225 miles apart. Find Peter's rate and Jane's rate.

$3J + 3(J+15) = 225$

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