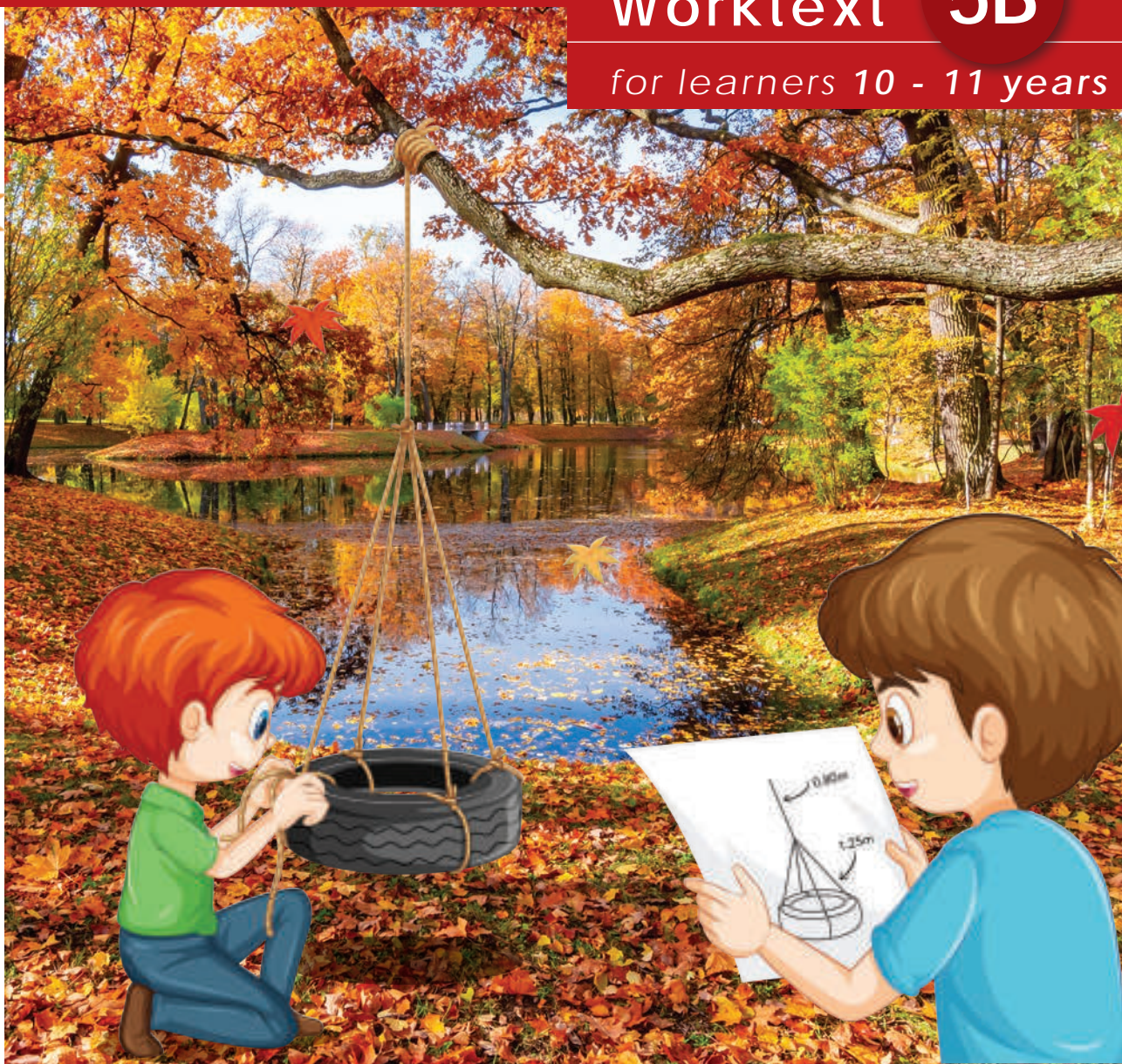




# Let's Do MATHEMATICS

Worktext **5B**

for learners 10 - 11 years old



# Let's Do Mathematics

Let's Do Mathematics is a series covering levels K-6 and is fully aligned to the United States Common Core State Standards (USCCSS). Each level consists of two books (Book A and Book B) and combines textbook-style presentation of concepts as well as workbook practice.

Central to the USCCSS is the promotion of problem-solving skills and reasoning. Let's Do Mathematics achieves this by teaching and presenting concepts through a problem-solving based pedagogy and using the concrete-pictorial-abstract (CPA) approach. Learners acquire knowledge and understanding of concepts through a guided progression beginning with concrete examples and experiences which then flow into pictorial representations and finally mastery at the abstract and symbolic level. This approach ensures that learners develop a fundamental understanding of concepts rather than answering questions by learned procedures and algorithms.

Key features of the series include:



## Anchor Task

Open-ended activities serve as the starting point for understanding new concepts. Learners engage in activities and discussions to form concrete experiences before the concept is formalized.



## Let's Learn

Concepts are presented in a clear and colorful manner. Worked problems provide learners with guided step-by-step progression through examples. Series mascots provide guidance through helpful comments and observations when new concepts are introduced.





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# 5

# Operations on Decimals



## Anchor Task



\$1.45 each



\$5.25 per pack



\$0.75 each





Find the sum of 148.27 and 61.58.

**Step 1**

Add the hundredths.

$$\begin{array}{r} 148.27 \\ + 61.58 \\ \hline \end{array}$$



We can regroup 15 hundredths into 1 tenth and 5 hundredths.

Hundreds	Tens	Ones	.	Tenths	Hundredths
●	●●●●	●●●●● ●●●	.	●●●	●●●●●● ●●
	●●●●● ●	●	.	●●●●●●	●●●●●● ●●

**Step 2**

Add the tenths.

$$\begin{array}{r} 148.27 \\ + 61.58 \\ \hline \end{array}$$

**Step 3**

Add the ones.

$$\begin{array}{r} 148.27 \\ + 61.58 \\ \hline \end{array}$$

Hundreds	Tens	Ones	.	Tenths	Hundredths
●	●●●●	●●●●● ●●●	.	●●●●●	●●●●●●
	●●●●● ●		.		



**Step 4**

Add the tens.

$$\begin{array}{r}
 \phantom{1}1 \phantom{4}8 \phantom{.}12 \phantom{7} \\
 + \phantom{1}6 \phantom{1} \phantom{.}5 \phantom{8} \\
 \hline
 \phantom{1}0 \phantom{9} \phantom{.}8 \phantom{5}
 \end{array}$$



We can regroup  
10 tens into  
1 hundred.

**Step 5**

Add the hundreds.

$$\begin{array}{r}
 \phantom{1}1 \phantom{4}8 \phantom{.}12 \phantom{7} \\
 + \phantom{1}6 \phantom{1} \phantom{.}5 \phantom{8} \\
 \hline
 \phantom{1}2 \phantom{0} \phantom{9} \phantom{.}8 \phantom{5}
 \end{array}$$

Hundreds	Tens	Ones	.	Tenths	Hundredths
● ● ←	● ● ● ●	● ● ● ● ●	.	● ● ● ● ●	● ● ● ● ●
	● ● ● ● ●		.		

$$148.27 + 61.58 = 209.85$$

Add 27.93 to 83.12.

$$\begin{array}{r}
 \phantom{1}2 \phantom{1}7 \phantom{.}9 \phantom{3} \\
 + \phantom{1}8 \phantom{3} \phantom{.}1 \phantom{2} \\
 \hline
 \phantom{1}1 \phantom{1} \phantom{1} \phantom{.}0 \phantom{5}
 \end{array}$$

$$27.93 + 83.12 = 111.05$$



We can use  
rounding and  
estimation to check  
our answers.



# 8

# Measurement

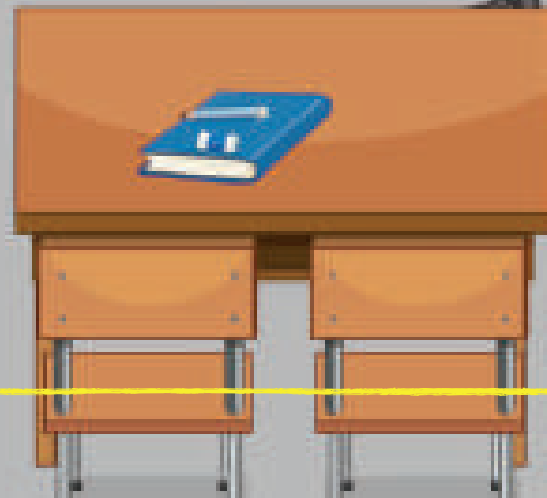
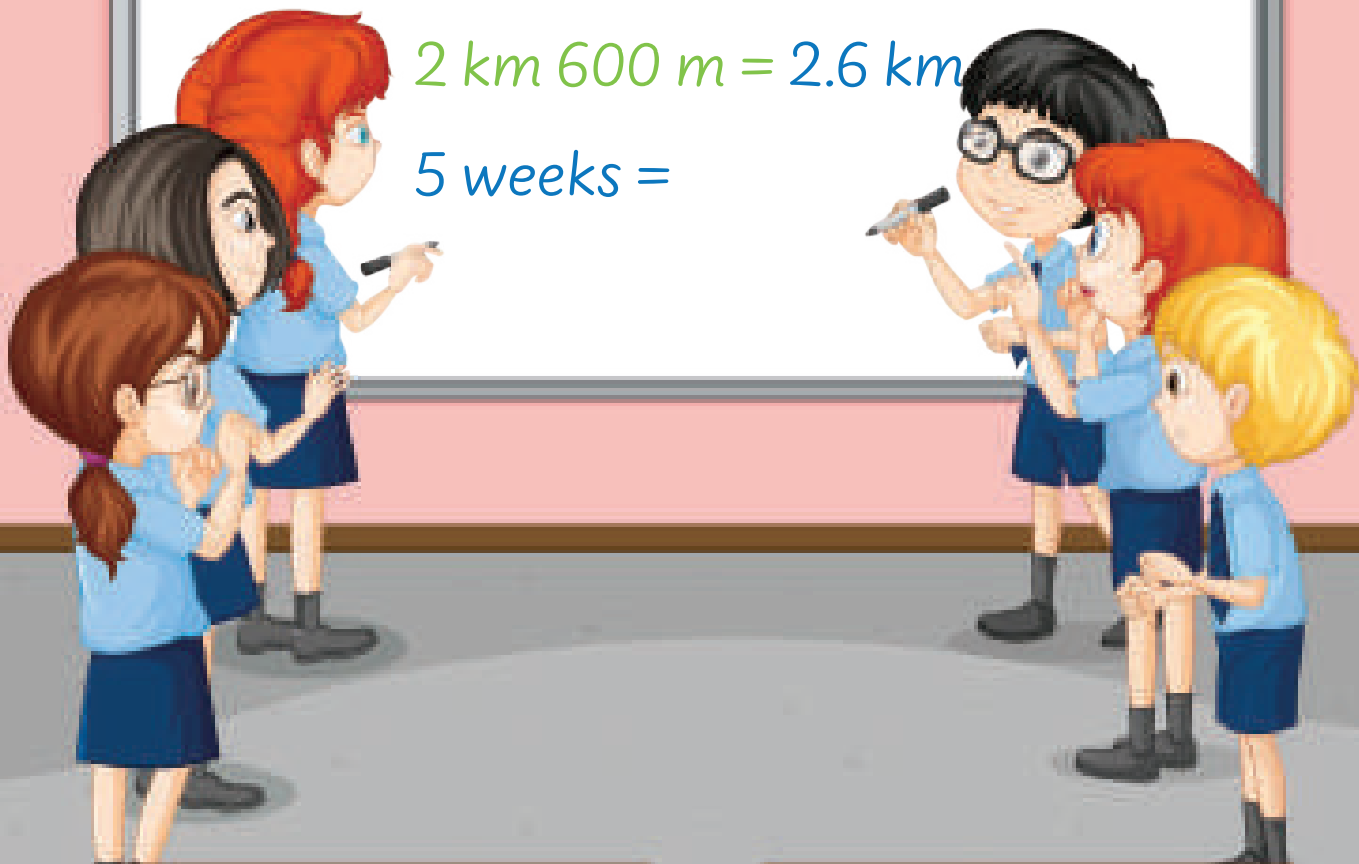


## Anchor Task

$$1,200 \text{ g} = 1.2 \text{ kg}$$

$$2 \text{ km } 600 \text{ m} = 2.6 \text{ km}$$

$$5 \text{ weeks} =$$



# Converting Measurement Units

## Let's Learn

Use the chart below to help you answer the word problems.

Length	
Metric	Customary
1 centimeter (cm) = 10 millimeters (mm) 1 decimeter (dm) = 10 centimeters 1 meter (m) = 100 centimeters 1 kilometer (km) = 1,000 meters	1 foot (ft) = 12 inches (in) 1 yard (yd) = 3 feet 1 mile (mi) = 1,760 yards (yd)
Mass	
Metric	Customary
1 kilogram (kg) = 1,000 grams (g)	1 pound (lb) = 16 ounces (oz) 1 ton (T) = 2,000 pounds
Volume	
Metric	Customary
1 liter (ℓ) = 1,000 milliliters (mℓ)	1 cup (c) = 8 fluid ounces (fl oz) 1 pint (pt) = 2 cups 1 quart (qt) = 2 pints 1 gallon (g) = 8 pints
Time	
1 minute = 60 seconds 1 hour = 60 minutes 1 day = 24 hours 1 week = 7 days 1 year = 52 weeks	



Sophie and Riley made 4 gallons of lemonade to sell at a school fundraiser. They plan to sell the lemonade for \$3 per pint.



What is the volume of lemonade Sophie and Riley made in pints?  
How much money will they raise if they sell all of their lemonade?

$$\begin{aligned} 4 \text{ gallons} &= 4 \times 8 \text{ pt} \\ &= 32 \text{ pt} \end{aligned}$$

So, Sophie and Riley made 32 pints of lemonade.

$$32 \times \$3 = \$96$$

Sophie and Riley will raise \$96 if they sell all of their lemonade.

Jordan's newborn kitten weighed 275 grams. It now weighs 12 times as much as it did as a newborn. How many kilograms does Jordan's kitten weigh now?



$$275 \text{ g} \times 12 = 3,300 \text{ g}$$

$$3,300 \text{ g} \div 1,000 = 3.3 \text{ kg}$$

Jordan's kitten weighs 3.3 kilograms now.





Mrs. Jenkins has  $10\frac{1}{2}$  pounds of cooked rice. She needs 4 ounces of rice to make a serving of Thai green curry. If she makes 40 servings of Thai green curry, how many ounces of rice will Mrs. Jenkins have left?



$$10\frac{1}{2} \text{ lb} \times 16 = 168 \text{ oz}$$

Mrs. Jenkins has 168 ounces of rice.

$$40 \times 4 \text{ oz} = 160 \text{ oz}$$

$$168 \text{ oz} - 160 \text{ oz} = 8 \text{ oz}$$

Mrs. Jenkins will have 8 ounces of rice left.

Wyatt has 1.5 liters of water in his drink bottle. After a run, he drinks 525 milliliters of water. How much water is left in his drink bottle?



$$\begin{aligned} 1.5 \text{ l} &= 1.5 \times 1,000 \text{ ml} \\ &= 1,500 \text{ ml} \end{aligned}$$

Before the run, there was 1,500 ml of water in Wyatt's drink bottle.

$$1,500 \text{ ml} - 525 \text{ ml} = 975 \text{ ml}$$

There is 975 ml of water left in Wyatt's drink bottle.



## Let's Practice

1. Convert the customary units of length. Show your working.

(a)  $2\frac{1}{2}$  ft = \_\_\_\_\_ in

(b) 66 in = \_\_\_\_\_ ft

(c) 5 mi = \_\_\_\_\_ yd

(d) 366 ft = \_\_\_\_\_ yd

(e)  $2\frac{1}{4}$  mi = \_\_\_\_\_ yd

(f) 2 yd = \_\_\_\_\_ in

2. Convert the metric units of length. Show your working.

(a) 2.6 km = \_\_\_\_\_ m

(b) 12,345 m = \_\_\_\_\_ km

(c) 25 dm = \_\_\_\_\_ m

(d) 390 cm = \_\_\_\_\_ dm

(e) 6.32 m = \_\_\_\_\_ mm

(f) 296 mm = \_\_\_\_\_ cm



3. Convert the customary units of mass. Show your working.

(a)  $17 \text{ lb} = \underline{\hspace{2cm}} \text{ oz}$

(b)  $256 \text{ oz} = \underline{\hspace{2cm}} \text{ lb}$

(c)  $4,000 \text{ lb} = \underline{\hspace{2cm}} \text{ T}$

(d)  $128 \text{ oz} = \underline{\hspace{2cm}} \text{ lb}$

(e)  $9,000 \text{ lb} = \underline{\hspace{2cm}} \text{ T}$

(f)  $352 \text{ oz} = \underline{\hspace{2cm}} \text{ lb}$

4. Convert the metric units of mass. Show your working.

(a)  $17 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

(b)  $3,250 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

(c)  $8.54 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

(d)  $13,400 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

(e)  $10.11 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

(f)  $1,270 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$





5. Convert the customary units of volume. Show your working.

(a)  $15 \text{ pt} = \underline{\hspace{2cm}} \text{ qt}$

(b)  $32 \text{ fl oz} = \underline{\hspace{2cm}} \text{ c}$

(c)  $44 \text{ pt} = \underline{\hspace{2cm}} \text{ gal}$

(d)  $12 \text{ gal} = \underline{\hspace{2cm}} \text{ qt}$

(e)  $1.5 \text{ qt} = \underline{\hspace{2cm}} \text{ fl oz}$

(f)  $66 \text{ cu} = \underline{\hspace{2cm}} \text{ pt}$

6. Convert the metric units of volume. Show your working.

(a)  $1,200 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$

(b)  $620 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$

(c)  $2.25 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

(d)  $9,900 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$

(e)  $0.22 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

(f)  $3.11 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$



## At Home

1. Convert the customary units of measurement. Show your working.

(a)  $4.5 \text{ lb} = \underline{\hspace{2cm}} \text{ oz}$

(b)  $96 \text{ oz} = \underline{\hspace{2cm}} \text{ lb}$

(c)  $11,000 \text{ lb} = \underline{\hspace{2cm}} \text{ T}$

(d)  $6.2 \text{ T} = \underline{\hspace{2cm}} \text{ lb}$

(e)  $192 \text{ in} = \underline{\hspace{2cm}} \text{ ft}$

(f)  $72 \text{ ft} = \underline{\hspace{2cm}} \text{ in}$

(g)  $51 \text{ yd} = \underline{\hspace{2cm}} \text{ ft}$

(h)  $2.5 \text{ mi} = \underline{\hspace{2cm}} \text{ yd}$

(i)  $13 \text{ pt} = \underline{\hspace{2cm}} \text{ fl oz}$

(j)  $24 \text{ qt} = \underline{\hspace{2cm}} \text{ gal}$

(k)  $10.5 \text{ gal} = \underline{\hspace{2cm}} \text{ pt}$

(l)  $12 \text{ fl oz} = \underline{\hspace{2cm}} \text{ pt}$



2. Convert the metric units of measurement. Show your working.

(a)  $12.1 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

(b)  $0.02 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

(c)  $1,250 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

(d)  $15,300 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

(e)  $22,200 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$

(f)  $1.22 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

(g)  $0.13 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

(h)  $950 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$

(i)  $91 \text{ dm} = \underline{\hspace{2cm}} \text{ m}$

(j)  $92.5 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$

(k)  $12.8 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

(l)  $0.41 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$

# Word Problems

## Let's Practice

1. Ethan fills a watering can with 3 gallons of water. After watering his garden, there are 2 quarts of water remaining in the watering can. How many quarts of water did Ethan use?



Blank area for writing the solution to problem 1.

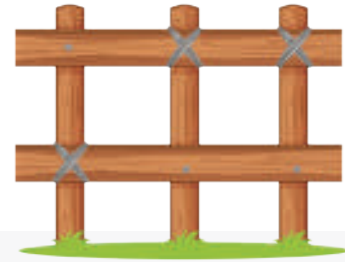
2. A bottle contains 32 fluid ounces of ketchup. How many pints of ketchup are in 4 bottles?



Blank area for writing the solution to problem 2.



3. Mr. Rogers has 10 meters of wire. He cuts the wire into 8 pieces of equal length to repair his fence. He has 3.6 meters of wire left. Find the length of each piece of wire he cut in centimeters.



Blank area for solving problem 3.

4. Sophie ran 9 laps of the athletics track at school. She ran a total distance of  $4\frac{1}{2}$  kilometers. How many meters is 1 lap of the track?



Blank area for solving problem 4.



5. Jordan and Wyatt make 12 liters of lemonade to sell at the local market. Each cup has 300 milliliters of lemonade. At the end of the day, they have 1.2 liters of lemonade left. How many cups of lemonade did they sell?



Blank area for writing the answer to question 5.

6. A farmer has 24 pounds of strawberries. He packs the strawberries into punnets weighing 12 ounces each. How many punnets of strawberries can the farmer pack?



Blank area for writing the answer to question 6.



7. A bag of potatoes weighs 64 ounces. Mr. Whyte buys 4 bags of potatoes. How many pounds of potatoes did Mr. Whyte buy?



Blank area for writing the answer to question 7.

8. Wyatt is giving away one balloon to each friend who attends his birthday party. On each balloon he ties 2.5 feet of string. How many yards of string will Wyatt need if 12 friends attend his birthday party?



Blank area for writing the answer to question 8.

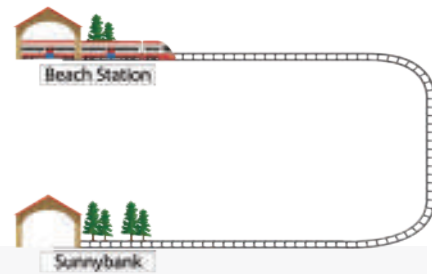


9. The distance from the campsite to the waterfall is 3 miles. Halle leaves the campsite and hikes for 2.5 miles in the direction of the waterfall. How many more yards does Halle have to hike to reach the waterfall?



Blank area for writing the answer to question 9.

10. Railway workers install 58 meters of train track per day. It takes them 47 days to install a track between Beach Station and Sunnybank Station. Find the distance between the stations in kilometres and meters.

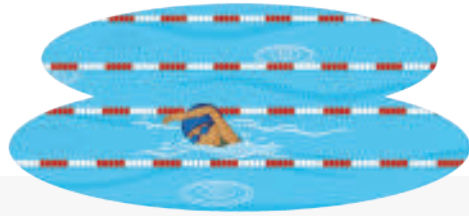


Blank area for writing the answer to question 10.





11. Michelle takes 6 minutes and 39 seconds to swim 6 laps of a swimming pool. How long did Michelle swim in seconds?



Blank area for writing the answer to question 11.

12. Halle buys ribbon to tie bows on some gifts. She uses 8 lengths of ribbon that are each 36 cm in length and has 22 cm of ribbon left. Find the total length of ribbon she bought in meters.



Blank area for writing the answer to question 12.



13. Chelsea is on a flight from Beijing to Dubai. The total flight time is 7 hours and 20 minutes. The plane has been flying for 5 hours and 25 minutes. How many more minutes does the plane need to fly before Chelsea arrives in Dubai?



Blank area for writing the answer to question 13.

14. Sophie and Halle made 4.5 gallons of fruit punch to sell at the town fair. They plan to sell the fruit punch for \$2.5 per pint. How much money will Sophie and Halle make if they sell all of the fruit punch?

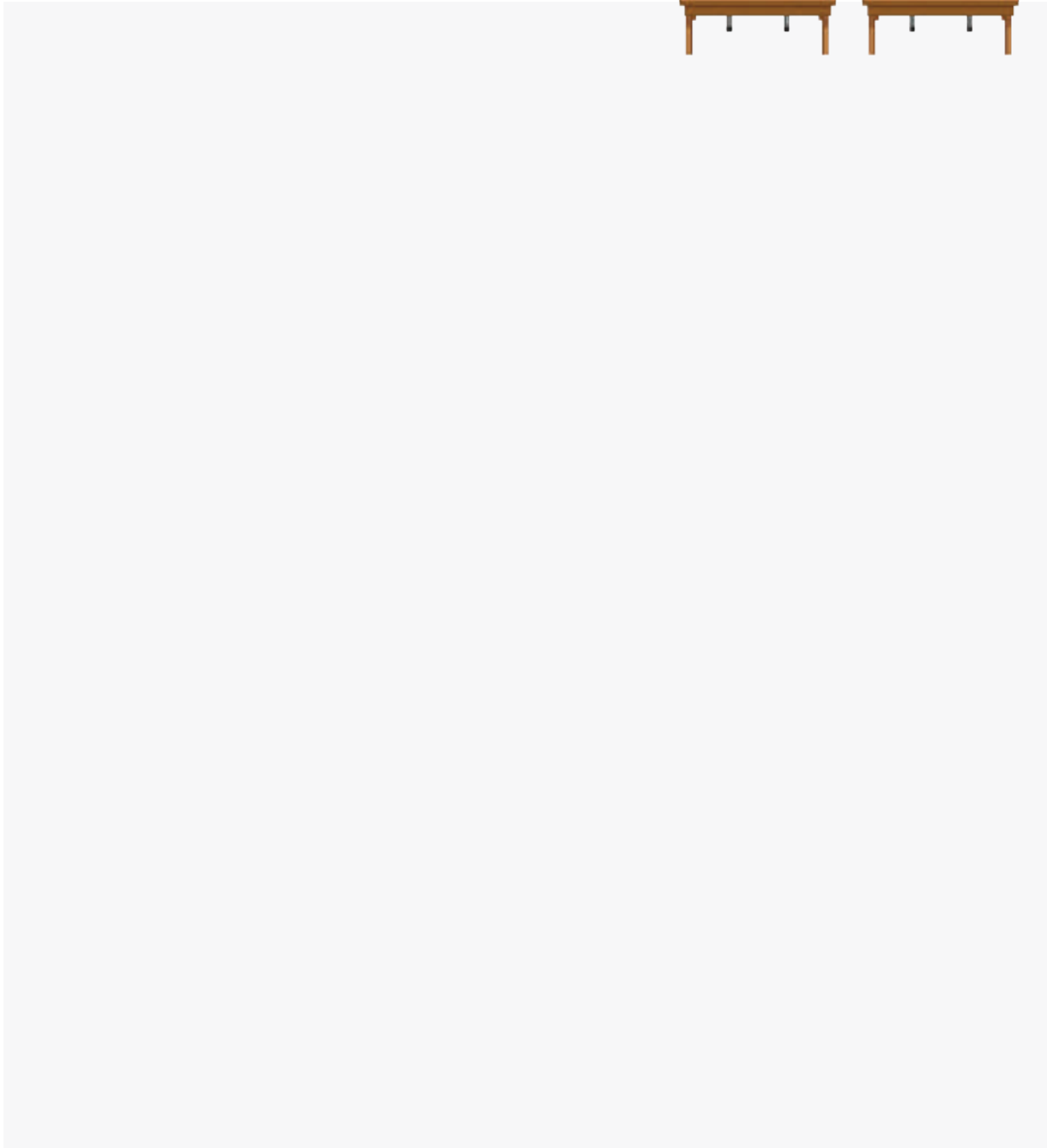


Blank area for writing the answer to question 14.



## Solve It!

1. The desks in an exam hall are to be spaced 4 decimeters apart. Each desk has a width of 7 decimeters. The exam hall is a rectangular-shaped room with a width of 14 meters. How many desks can be placed across the room? Note the desks on the sides can touch the wall.





2. A bathtub contains 120 liters of water. Ethan pulls the plug and the water drains from the bathtub at a rate of 250 mL per second. If Ethan pulled the plug at 6:00 p.m., what time will the bathtub drain completely?





## At Home

1. Keira is building a square picture frame with a side length of 15 inches. She cuts the sides of the frame from a piece of wood that is 6 feet long. What is the length of the wood leftover? Express your answer in inches.



Blank area for writing the answer to Question 1.

2. Danny the bricklayer loads 9,000 pounds of bricks onto his truck. He uses 2,000 pounds of bricks to build a retaining wall. What is the mass of the bricks left on his truck? Express your answer in tons.



Blank area for writing the answer to Question 2.



3. A dripping tap leaks 1 milliliter of water every second. Find the volume of water leaked in 2 hours in liters and milliliters.



Blank area for the solution to problem 3.

4. Blake is on summer break for 6 weeks. On the first day of summer break, he goes on a diving trip with his father for 12 days. He then stays at his grandmother's house for 2 weeks. How long before Blake goes back to school? Express your answer in weeks and days.



Blank area for the solution to problem 4.



5. A paint store buys a large, 44-gallon drum of paint. It sells the paint in 2-pint tins. In 1 day, the store sells 170 tins of paint. Find the volume of paint left in the drum in pints.



Blank area for writing the answer to question 5.

6. There is a dance performance at the local department store. There are 3 shows of the same duration with a 15-minute break between each show. The first show starts at midday. The last show finished at 4:00 p.m. What is the length of 1 show in hours and minutes?



Blank area for writing the answer to question 6.

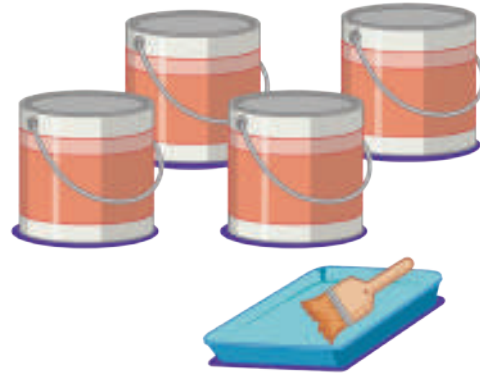


7. It takes Riley 3 minutes to walk 250 meters.  
How far does Riley walk in  $1\frac{1}{2}$  hours?  
Express your answer in kilometers.



Blank area for the answer to question 7.

8. A painter needs 4 gallons of paint to complete painting a living room. He finds 3 old tins of paint. The first tin contains 2 quarts of paint. The second tin contains 5 pints of paint. The third tin contains 1 gallon of paint. Does the painter have enough paint to finish painting the living room? If no, how much more paint will he need? If yes, how much paint will be left over? Express your answer in pints.



Blank area for the answer to question 8.



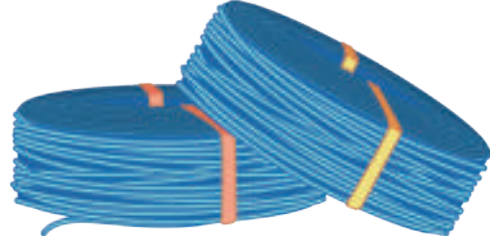


## Solve It!

A computer store sells data cables in 2 price plans.

**Plan 1:** 50¢ per meter for the first 500 meters, then 20¢ per meter thereafter.

**Plan 2:** 40¢ per meter for any length.

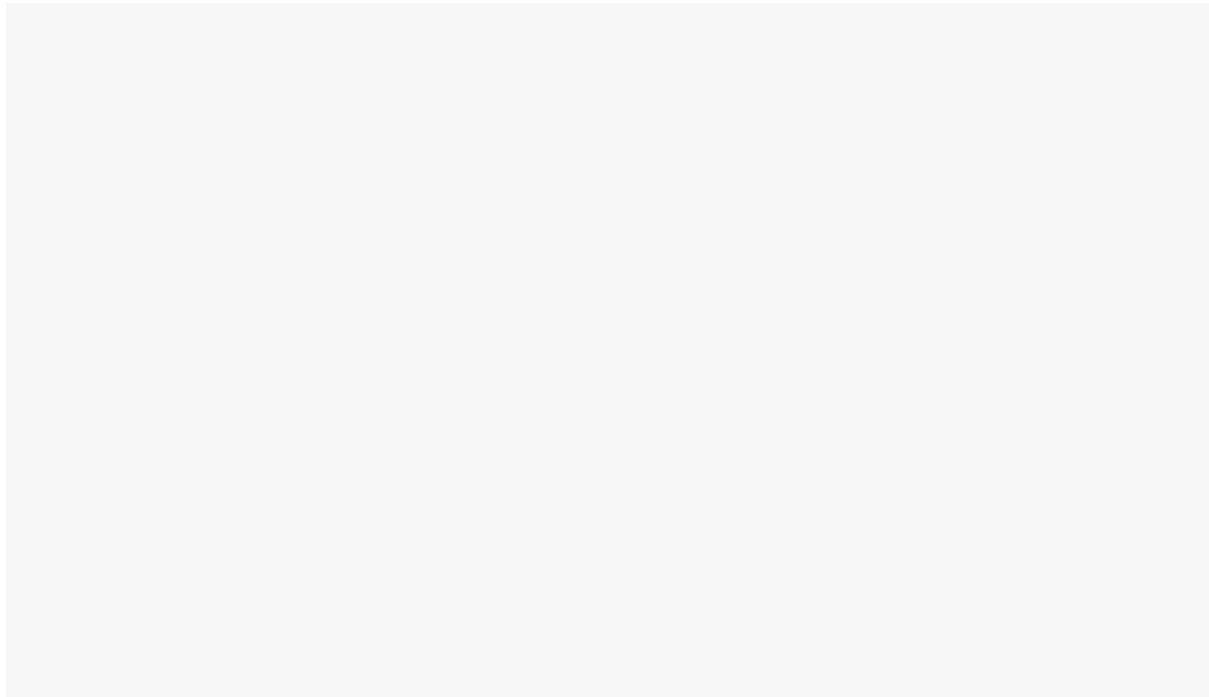


1. Find the cheaper plan for buying  $\frac{4}{5}$  km of data cable.

2. How much money is saved on the cheaper plan?



3. At what length are both Plan 1 and Plan 2 the same price?



4. The store is running a sale for Plan 2 – 50% off for purchases over 5 km. Which is the cheaper plan for buying a 5-kilometer cable?

