

Chapter 8 Rate

Practice 1 Finding Rate

- 1 Mr Lee is paid \$90 for working 9 hours.
How much is he paid per hour?

$\div 9$	9 h	\$90	$\div 9$
	1 h	\$?	

- 2 In 2 hours, a tractor travels 14 km.
At this rate, how far can the tractor travel per hour?

$\div 2$	2 h	14 km	$\div 2$
	1 h	? km	

- 3 Ranee types 105 words in 5 minutes.
At this rate, how many words can she type in 1 minute?

	min	words	
	min	words	

- 4 The cost of carpeting a room of 20 m^2 is \$580.
What is the cost of carpeting one square metre of the room?



- 5 A car uses 25 l of petrol to travel 280 km .
At this rate, how far can the car travel per litre of petrol?



Practice 3 **Word Problems**

- 1 Mrs Seah will receive \$112 for 8 hours of work.
Based on this rate, how many hours does she have to work to receive \$168?



- 2 For 8 hours of work, Mrs Tan is paid \$104.
Based on this rate, how many hours does she work if she is paid \$156?





- 3 A machine makes 750 bottles in 15 minutes.
At this rate, how long will the machine take to make 1000 bottles?



- 4 In 2 minutes, Andy reads 280 words.
At this rate, how long does he take to read 1820 words?

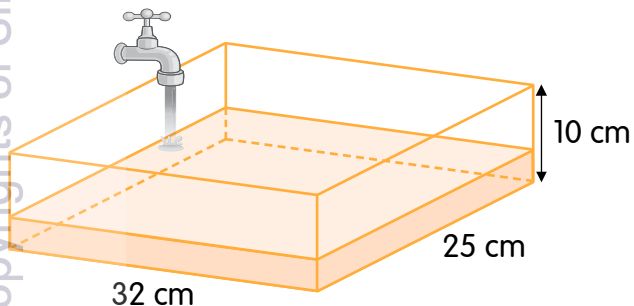




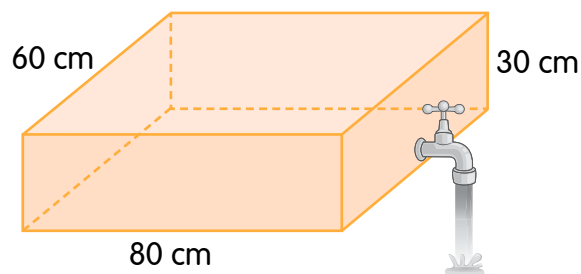
- 5 In 10 minutes, 120 ℓ of water flows from a tap.
At this rate, how many minutes will it take for 168 ℓ of water to flow from the tap?



- 6 An empty rectangular tank is 32 cm long, 25 cm wide and 10 cm high.
It is filled with water from a tap. For every 1 minute, 2 ℓ of water will flow from the tap into the rectangular tank.
How long will it take to fill the rectangular tank to its brim?

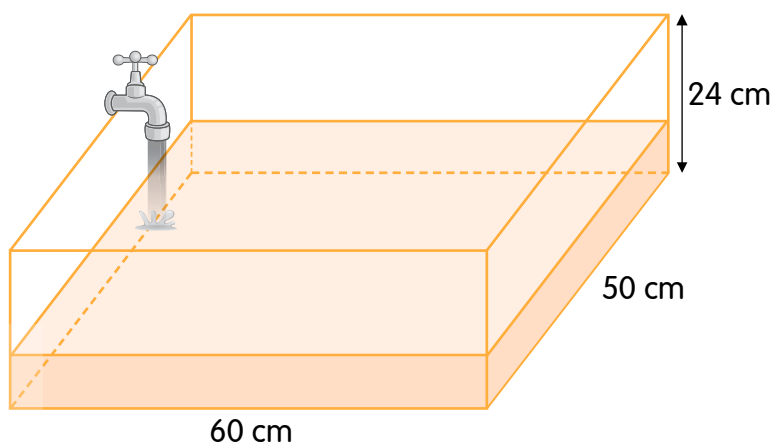


- 7 A rectangular tank measuring 80 cm by 60 cm by 30 cm is completely filled with water. A tap was turned on to drain water from the tank at a rate of 9 ℓ per minute.



How long did it take to drain $\frac{3}{4}$ of the water from the tank?

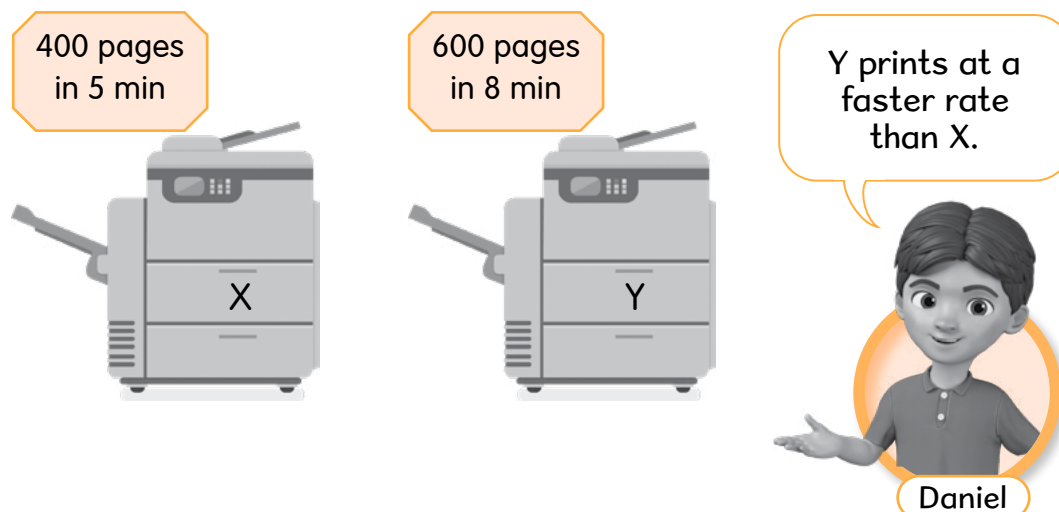
- 9 A rectangular tank 60 cm long, 50 cm wide and 24 cm high was $\frac{1}{3}$ filled with water at first. A tap was then turned on to completely fill the tank. The rate of water flowing from the tap into the tank was 3 ℓ per minute.



How long did it take to fill the tank completely? Give your answer in minutes.

Maths Journal

The figure shows the rate of printing of two photocopiers, X and Y.

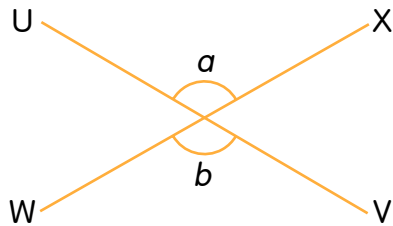
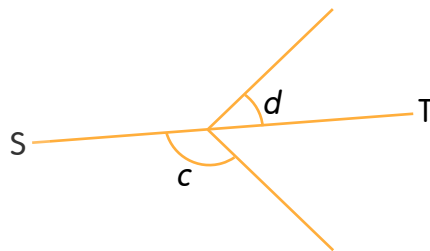
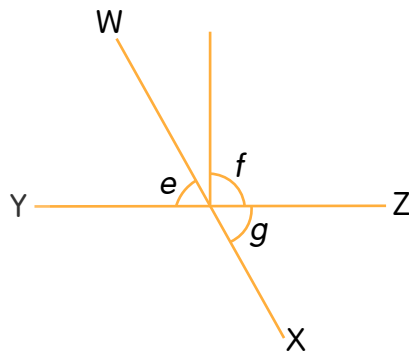
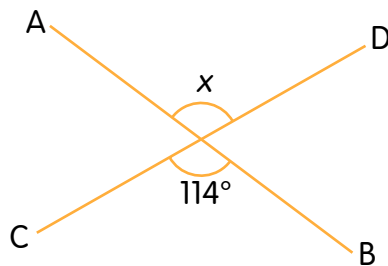
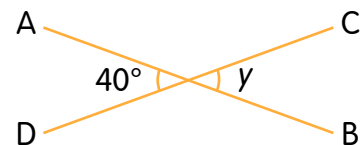
**Daniel's explanation:**

X can print 400 pages in 5 min. Y can print 600 pages in 8 min.
With 3 more minutes, Y can print 200 pages more than X.
So, Y prints at a faster rate than X.

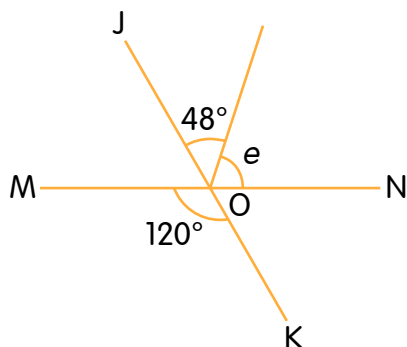
Is Daniel's reasoning correct?

Show him how you would compare the rates to find out if X or Y prints at a faster rate.

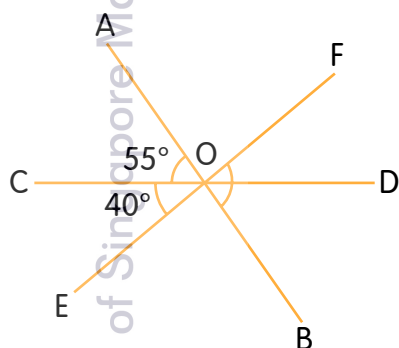
SM

Practice 3 Vertically Opposite Angles**1** Circle **Yes** or **No**.**(a)** UV and WX are straight lines.Is $\angle a = \angle b$? Yes or No**(b)** ST is a straight line.Is $\angle c = \angle d$? Yes or No**(c)** WX and YZ are straight lines.Is $\angle e = \angle f$? Yes or NoIs $\angle e = \angle g$? Yes or No**2** AB and CD are straight lines. Find the unknown angles.**(a)** $\angle x =$ **(b)** $\angle y =$

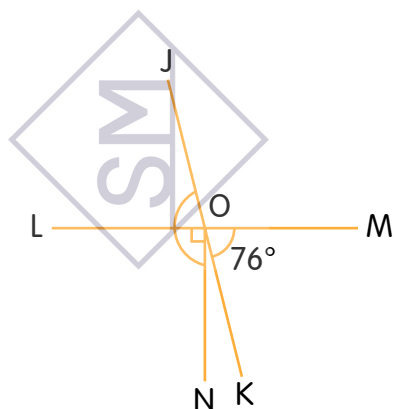
- 3 JK and MN are straight lines. Find $\angle e$.



- 4 AB, CD and EF are straight lines. Find $\angle BOF$.

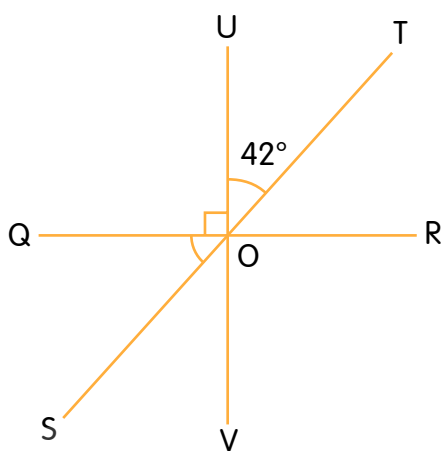


- 5 JK and LM are straight lines. Find $\angle JON$.

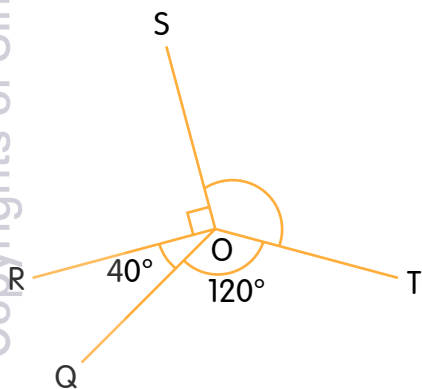


Practice 4 Finding Unknown Angles

- 1 QR, UV and TS are straight lines. Find $\angle QOS$.

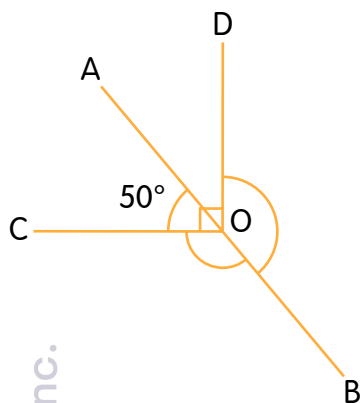


- 2 Find $\angle SOT$.

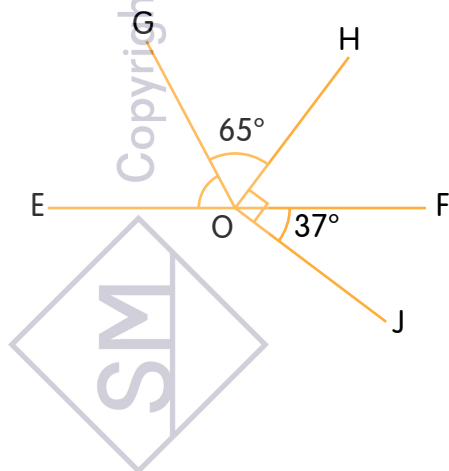


- 3 AB is a straight line. $\angle AOC = 50^\circ$ and $\angle COD$ is a right angle.
Find

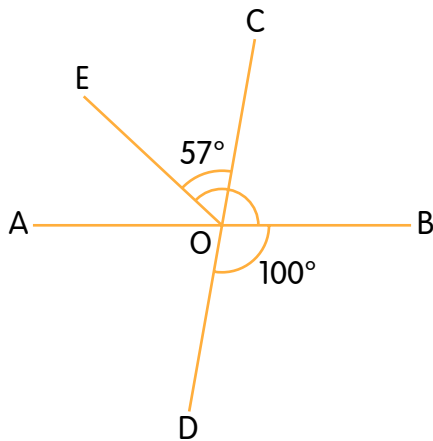
- (a) $\angle COB$,
(b) $\angle DOB$.



- 4 EF is a straight line. Find $\angle EOG$.



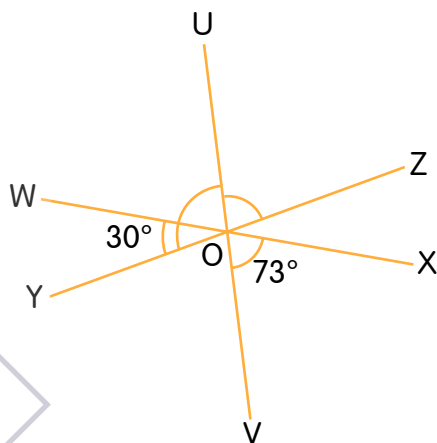
- 5 AB and CD are straight lines. Find $\angle BOE$.



- 6 UV, WX and YZ are straight lines.
Find

(a) $\angle UOZ$,

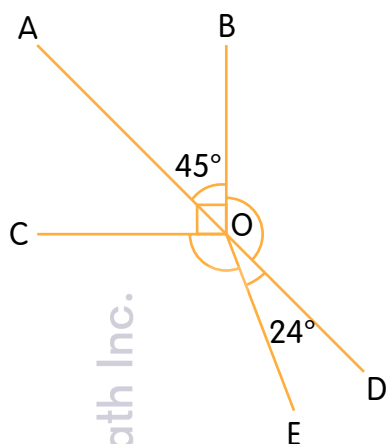
(b) $\angle UOY$.



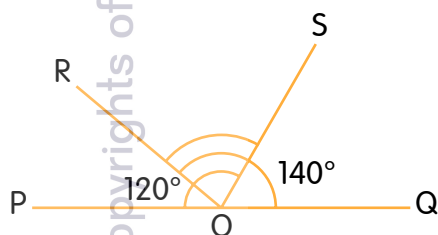
- 7 AD is a straight line. $\angle AOB = 45^\circ$ and $\angle DOE = 24^\circ$.

Find

- (a) $\angle BOD$,
(b) $\angle COE$.



- 8 PQ is a straight line. $\angle POS = 120^\circ$ and $\angle QOR = 140^\circ$. Find $\angle ROS$.

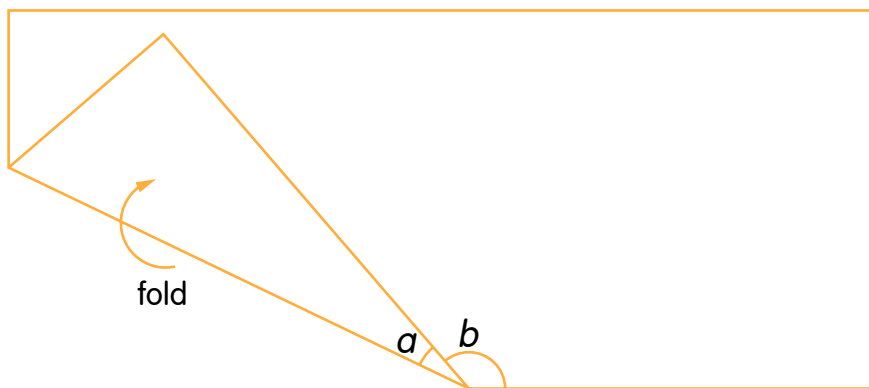


Performance Task

Activity: Finding an angle using angle property.

Work in pairs.

(a) Fold a piece of A4 paper as shown and use a protractor to measure $\angle a$ only.



$\angle a =$

(b) Explain how you can find $\angle b$ without using a protractor.

Area for writing the explanation.