

Year 8 Term 1 Math Homework

Student Name: _____	Grade: _____
Date: _____	Score: _____

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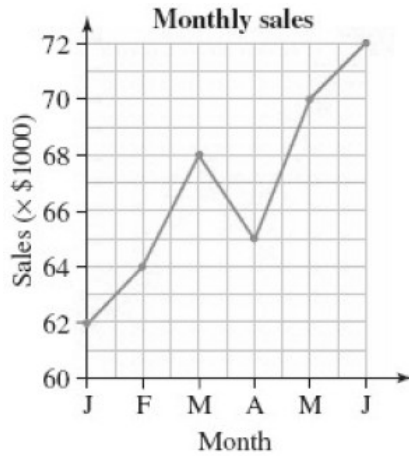
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9 Year 8 Term 1 Week 9 Homework

9.1 Data representation

9.1.1 Reading and Interpreting Graphs

Exercise 9.1.1 This line graph shows the monthly sales of a company from January to June.



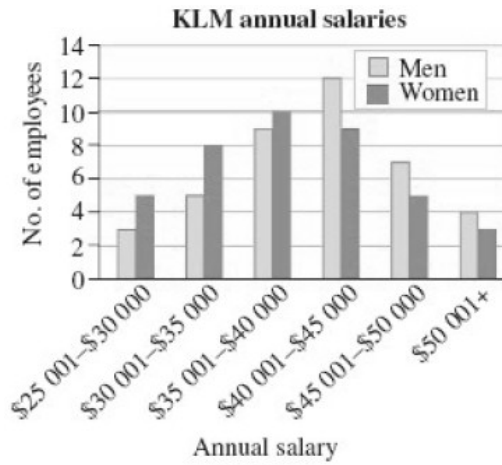
1. What were the monthly sales in April?

2. During which month did sales fall?

3. By how much have sales increased over the first six months of the year?

4. What is the total sales for the first six months?

Exercise 9.1.2 This side-by-side column graph shows the number of men and women in each salary range at KLM Communications.



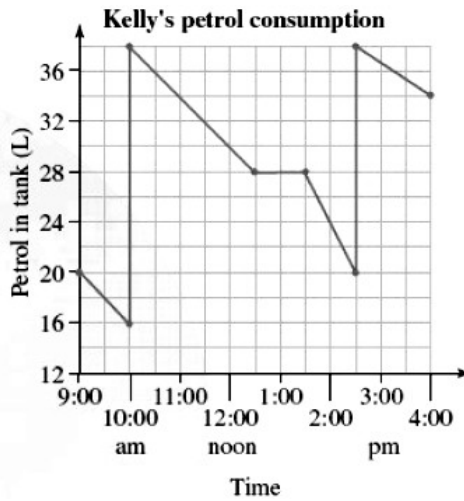
1. How many men earn between \$30,001 and \$35,000?

2. How many women earn between \$30,001 and \$45,000?

3. Of those employees who are paid \$40,001 or more, what percentage are women?

4. KLM claims to be an equal opportunity employer because it employs equal numbers of men and women. Is this statement valid? Explain your answer.

Exercise 9.1.3 Kelly left home at 9:00 am to visit her parents who live in Wagga. The graph shows the volume of petrol in the petrol tank of her car throughout the trip.



1. How many petrol was in the tank when she left home?

2. What happened at 10:00 am?

3. How much petrol was left in the tank at noon?

4. How much petrol was used between 10:00 am and 12:30 pm?

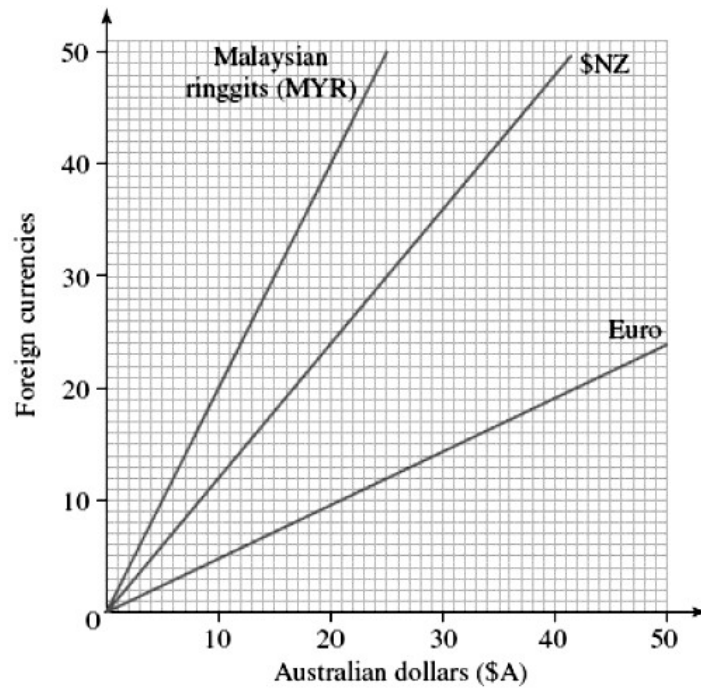
5. When did Kelly stop and for how long?

6. How much petrol was used altogether on this trip?

7. What might be the capacity of the petrol tank?

8. When do you think Kelly was driving the fastest? How do you know?

Exercise 9.1.4 This graph shows the conversion between Australian dollars and Foreign currencies.



1. Convert \$A40 to \$NZ.

2. Convert \$30 euro to \$A.

3. Which is greater in Australian dollars, 21 euro or \$NZ48, and by how much?

4. After visiting several countries, a tourist returned to Australia with 14 MYR, \$NZ18 and 24 euro. How much is this altogether in Australian dollars?

9.2 Angles and Geometric

9.2.1 Adjacent Angles

Two angles are adjacent if they:

- have a common vertex
- have a common ray
- lie on opposite sides of this common ray

9.2.2 Complementary Angles

Two angles are complementary if they have a sum of 90° .

9.2.3 Supplementary Angles

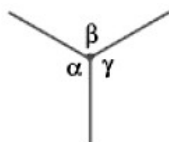
Two angles are supplementary if they have a sum of 180° .

Exercise 9.2.1 Find:

1. half the complement of 60° _____
2. one-third of the supplement of 30° _____
3. the complement of the supplement of 115° _____
4. the supplement of the complement 28° _____

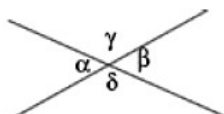
9.2.4 Angles at a Point and Vertically Opposite Angles

1. The sum of the angles drawn from a common point is 360° .



That is, $\alpha + \beta + \gamma = 360^\circ$

2. Vertically opposite angles are equal.

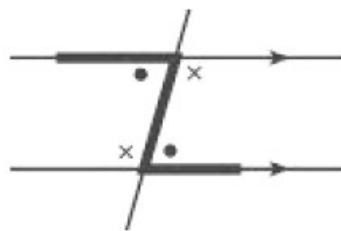


That is, $\alpha = \beta$ and $\gamma = \delta$

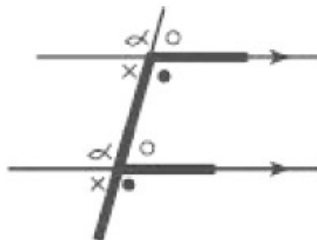
9.2.5 Parallel Lines

- Parallel lines are straight lines have been drawn in the same plane and are equidistant.
- A third line that cuts the two parallel lines is called a transversal.
- When a transversal intersects a pair of parallel lines, 8 angles are formed which can be classified as the following three special pairs of angles:

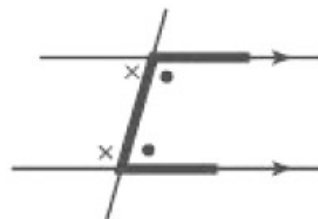
1. Alternate angles: They lie between the parallel and on opposite side of the transversal. They form a Z shape and they are equal.



2. Corresponding angles: They lie on the same side of the parallel lines and on the same side of the transversal. They form a F shape and they are equal.

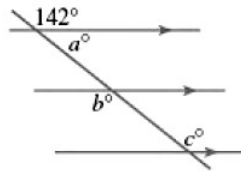


3. Co-interior angles: They lie between the parallel lines and on the same side of the transversal. They form a C shape and they are supplementary.

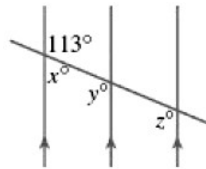


Exercise 9.2.2 Find the value of the pronumerals in each of the following figures, giving reasons.

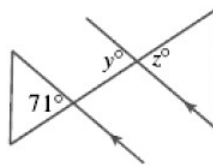
1. $a =$ _____, $b =$ _____, $c =$ _____



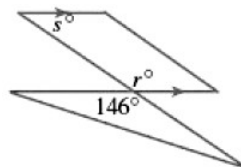
2. $x =$ _____, $y =$ _____, $z =$ _____



3. $y =$ _____, $z =$ _____

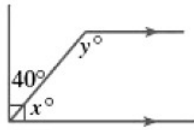


4. $s =$ _____, $r =$ _____

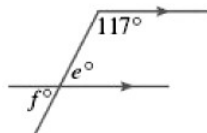


Exercise 9.2.3 Find the value of the pronumerals in each of the following figures, giving reasons.

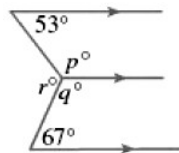
1. $x =$ _____, $y =$ _____



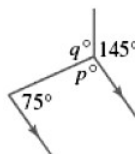
2. $e =$ _____, $f =$ _____



3. $p =$ _____, $q =$ _____, $r =$ _____



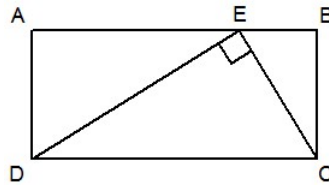
4. $p =$ _____, $q =$ _____



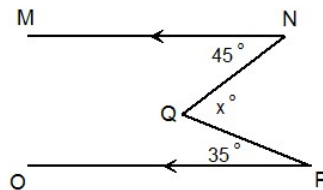
9.3 Math challenge

Exercise 9.3.1

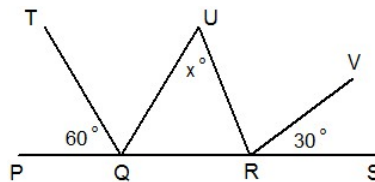
1. $ABCD$ is a rectangle as shown below. E lies on side AB and $\triangle DEC$ is a right-angled triangle. If $CE = 6$, $DE = 8$ and $CD = 10$, find the area of rectangle $ABCD$.



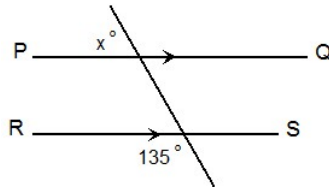
2. In the diagram MN is parallel to OP . If $\angle MNQ = 45^\circ$ and $\angle QPO = 35^\circ$, find the value of x .



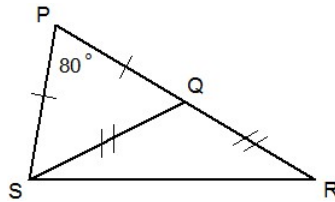
3. In the diagram $PQRS$ is a straight line, $\angle TQP = 60^\circ$, $\angle SRV = 30^\circ$. If UQ bisects $\angle TQR$, UR bisects $\angle QRV$, find the value of x .



4. In the diagram, PQ parallel to RS . Find the value of x .



5. In the diagram $PS = PQ$ and $QS = QR$. If $\angle SPQ = 80^\circ$, what is the value of the $\angle QSR$?



6. In the diagram shown below. $\triangle PQR$ is a right-angled triangle. $PQ = 3$ cm and $QR = 7$ cm. At P , PS is drawn so that $\angle RPS = 90^\circ$ and $PR = PS$. Find the area of $\triangle PRS$.

