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Unit 4: General Mathematics

Short-answer questions

Specific instructions to students

- This unit will help you to improve your general mathematical skills.
- Read the following questions and answer all of them in the spaces provided.
- You may not use a calculator.
- You need to show all working.

QUESTION 1

What unit of measurement would you use to measure:

a spark plug gaps?

Answer:

b the temperature of radiator coolant?

Answer:

c the amount of oil in a transmission?

Answer:

d the weight of a car body?

Answer:

e the speed of a vehicle?

Answer:

f the amount of oil in an unopened oil container?

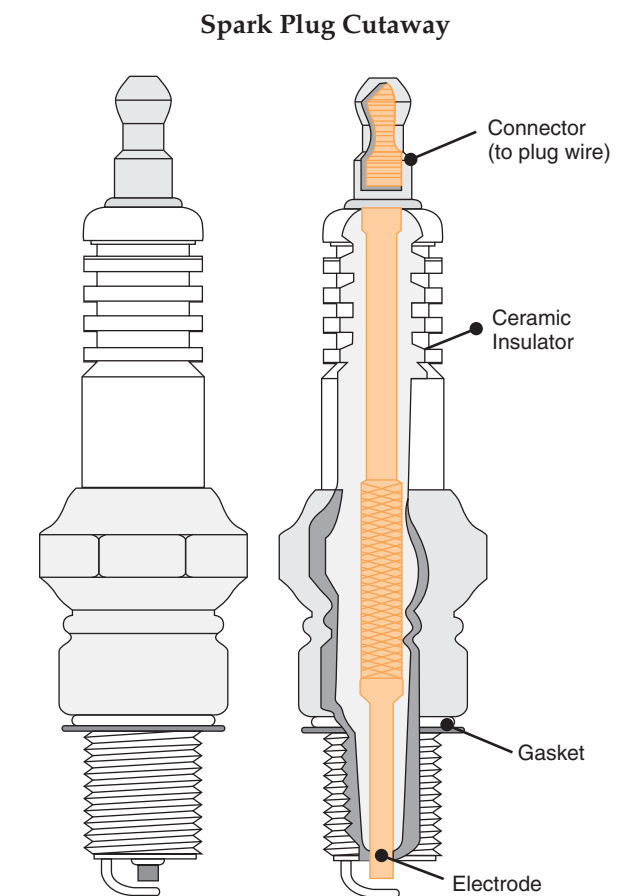
Answer:

g the cost of a used car?

Answer:

QUESTION 2

Give an example of each of the following, and very briefly describe an instance of where they may be found in the automotive industry:



a Percentage

Answer:

b Decimal

Answer:

Unit 10: Measurement – Length, Area and Volume

Section A: Circumference

Short-answer questions

Specific instructions to students

- This section is designed to help you to both improve your skills and to increase your speed in measuring the circumference of a round object.
- Read the following questions and answer all of them in the spaces provided.
- You may not use a calculator.
- You will to show all working.

$$C = \pi \times d$$

where:

C = circumference

π = 3.14

d = diameter

EXAMPLE

Find the circumference of a wheel with a diameter of 30 cm.

$$C = \pi \times d$$

$$\begin{aligned} \text{Therefore, } C &= 3.14 \times 30 \\ &= 94.2 \text{ cm} \end{aligned}$$

QUESTION 1

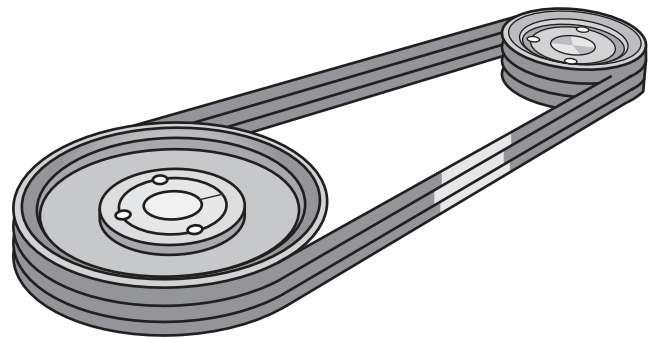
Find the circumference of a wheel with a diameter of 200 cm.

Answer:

QUESTION 2

Calculate the circumference of a pulley with a diameter of 15 cm.

Answer:



QUESTION 3

Find the circumference of a headlight with a diameter of 32 cm.

Answer:

QUESTION 4

Determine the circumference of an inlet valve with a diameter of 5 cm.

Answer:

QUESTION 5

Calculate the circumference of distributor cap with a diameter of 30 cm.

Answer:

QUESTION 6

Find the circumference of a front rotor with a diameter of 28.8 cm.

Answer:

SAMPLE PAGES

Section B: Applying square numbers to the trade

Worded practical problems

Specific instructions to students

- This section is designed to help you to both improve your skills and to increase your speed in calculating volumes of rectangular or square objects. The worded questions make the content relevant to everyday situations.
- Read the following questions and answer all of them in the spaces provided.
- You may not use a calculator.
- You need to show all working.

QUESTION 1

A spray painter needs to spray an area which measures 2.8×2.8 metres. What area does it take up?

Answer:

QUESTION 2

A workshop has a welding area that is 5.2×5.2 metres. What is the total area?

Answer:

QUESTION 3

The dimensions of a garage are 12.6×12.6 metres. What is the total area?

Answer:



QUESTION 4

A mechanic works in an area that is 15×15 metres.

If there is an area allocated for storage which is 2.4×2.4 metres, how much area is left for the mechanic to work in?

Answer:

QUESTION 5

An auto electrician has a total work area of 13.8×13.8 metres. The spare parts area takes up 1.2×1.2 metres and the tool area is 2.7×2.7 metres. How much area is left to work in?

Answer:

SAMPLE PAGES

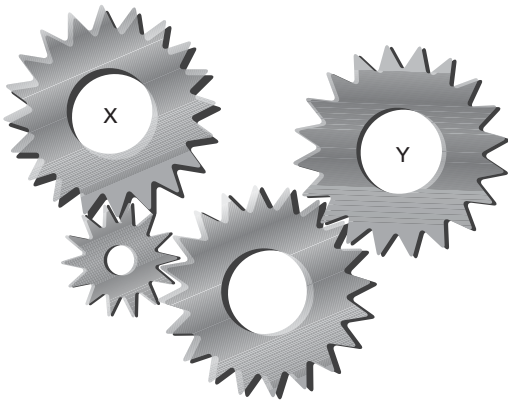
Unit 14: Mechanical Reasoning

Short-answer questions

Specific instructions to students

- This section is designed to help you improve your skills in mechanical reasoning.
- Read the following questions and answer all of them in the spaces provided.
- You may not use a calculator.
- You need to show all working.
- Reduce the ratios to the simplest or lowest form.

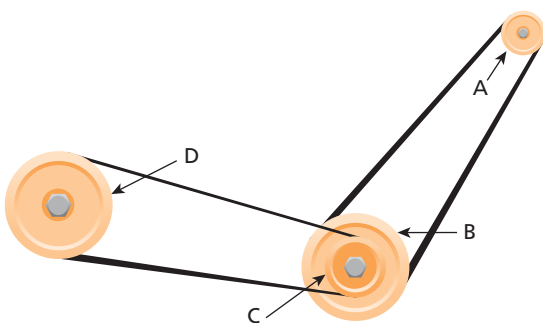
QUESTION 1



If cog X turns in a clockwise direction, which way will cog Y turn?

Answer:

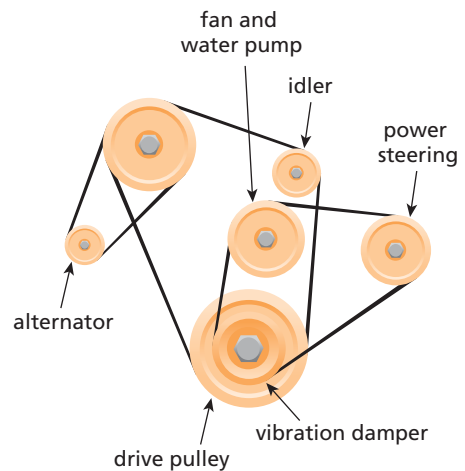
QUESTION 2



If pulley A turns in a clockwise direction, which way will pulley D turn?

Answer:

QUESTION 3

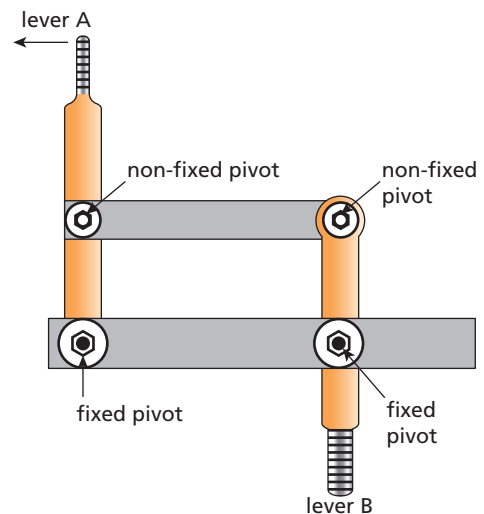


If the drive pulley in a work van engine turns in a clockwise direction, in which direction will the alternator turn?

Answer:

QUESTION 4

Looking at the following diagram, if lever A moves to



the left, in which direction will lever B move?

Answer:

SAMPLE PAGES

Automotive

Practice Written Exam for the Automotive Trade

Reading time: 10 minutes
Writing time: 1 hour 30 minutes

Section A: Literacy
Section B: General Mathematics
Section C: Trade Mathematics

QUESTION and ANSWER BOOK

<i>Section</i>	<i>Topic</i>	<i>Number of questions</i>	<i>Marks</i>
A	Literacy	7	22
B	General Mathematics	11	24
C	Trade Mathematics	42	54
		Total 60	Total 100

The sections may be completed in the order of your choice.
NO CALCULATORS are to be used during the exam.

SAMPLE PAGES

Section A: Literacy

Spelling

Read the passage below, then underline the 20 spelling errors.

10 marks

A garuge has eighteen cars in for servises. Six of the cars also need body work due to minor collitions that had happened during the recent wet weather. The apprentice had to go to the storeroom to retrieve the spark plugs that were needed to tune some of the other cars. Meenwhile, the other two mechanics began work on the VN Commodore. The windscreen needed to be replased as it had a mojour crack through it from the lower ritte side up through the left side. The P-plate driver had been following a semi-trailer when it kicked a stone and hit directly on the windscreen. The driver swurved as the stone hit the car and ended up hitting a telegraf pole, then ended up in a ditch. This caused damige along the driver's side front wheel and panel. Major panell beating and respraying had to be undartaken to bring the car back to its original condision.

In addision, the steering needed checking, the radiater needed a complete re-build and the alternater was damaged beyond repair and needed replacing. The head mekanic wanted the work completed by the end of the day so that there was no work to be done over the weekend.

Correct the spelling errors by writing them out with the correct spelling below.

Alphabetising

Put the following words into alphabetical order.

6 marks

Wheel alignment	Gearbox
Tail light	Air horn
Spark pugs	Electronic ignition
Rear end	Seat belt
Exhaust pipe	Provisional license
Inlet valves	LPG (Liquid Petroleum Gas)

SAMPLE PAGES