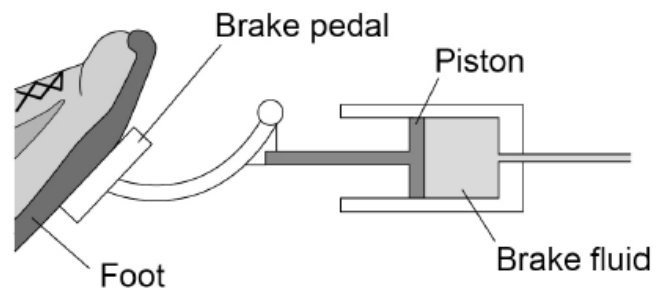**AQA - Pressure and pressure difference in fluids – GCSE Physics**

1. June/2021/Paper_2F/No.8(8.5_8.6)

Figure 19 shows part of the braking system for a car.

Figure 19

Brake pedal

Piston

Foot

Brake fluid

| 0 | 8 |.| 5 | Which equation links area of a surface (A), the force normal to that surface (F) and pressure (p)?

[1 mark]

Tick (✓) **one** box.

$p = F \times A$ ☐

$p = F \times A^2$ ☐

$p = \dfrac{F}{A}$ ☐

$p = \dfrac{A}{F}$ ☐

0 8 . 6 When the brake pedal is pressed, a force of 60 N is applied to the piston.

The pressure in the brake fluid is 120 000 Pa.

Calculate the surface area of the piston.

Give your answer in standard form.
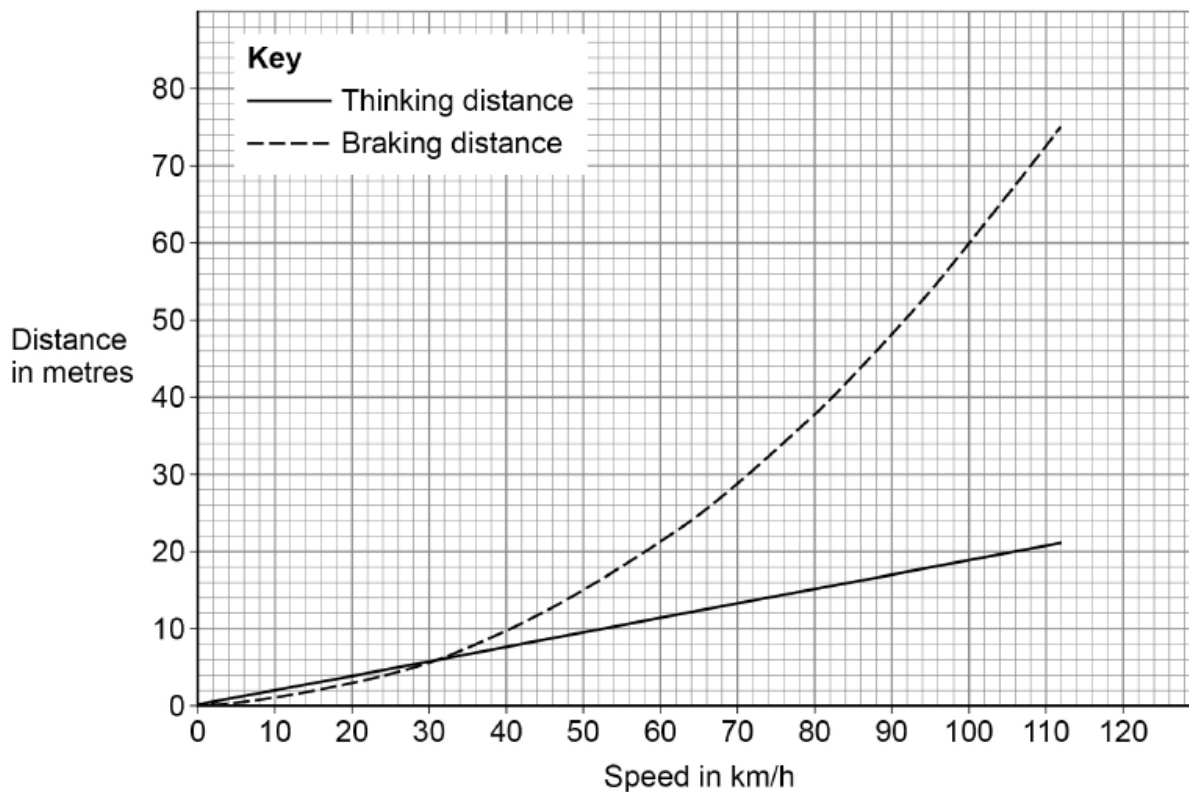
Give the unit.

[5 marks]

_____

_____

_____

_____

_____

_____

_____

_____

_____

Surface area (in standard form) = _____ Unit _____

2. June/2021/Paper_2H/No.1(1.4_1.6)

0 1 . 4 **Figure 1** shows how the thinking distance and braking distance for a car vary with the speed of the car.
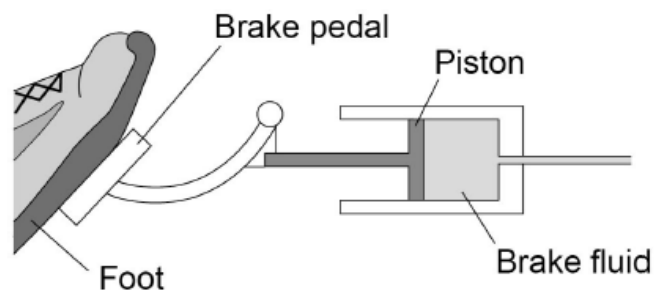
Figure 1

Determine the stopping distance when the car is travelling at 80 km/h.

[2 marks]

_____

_____

_____

Stopping distance = _____ m

3

Figure 2 shows part of the braking system for a car.

Figure 2

Brake pedal

Piston

Foot

Brake fluid

| 0 | 1 |. | 5 | Which equation links area of a surface (A), the force normal to that surface (F) and pressure (p).

[1 mark]

Tick (✓) **one** box.

$p = F \times A$ ☐

$p = F \times A^2$ ☐

$p = \dfrac{F}{A}$ ☐

$p = \dfrac{A}{F}$ ☐

4

0 1 . 6 When the brake pedal is pressed, a force of 60 N is applied to the piston.

The pressure in the brake fluid is 120 000 Pa.

Calculate the surface area of the piston.

Give your answer in standard form.

Give the unit.

[5 marks]

_____

_____

_____

_____

_____

_____

_____

_____

Surface area (in standard form) = _____ Unit _____