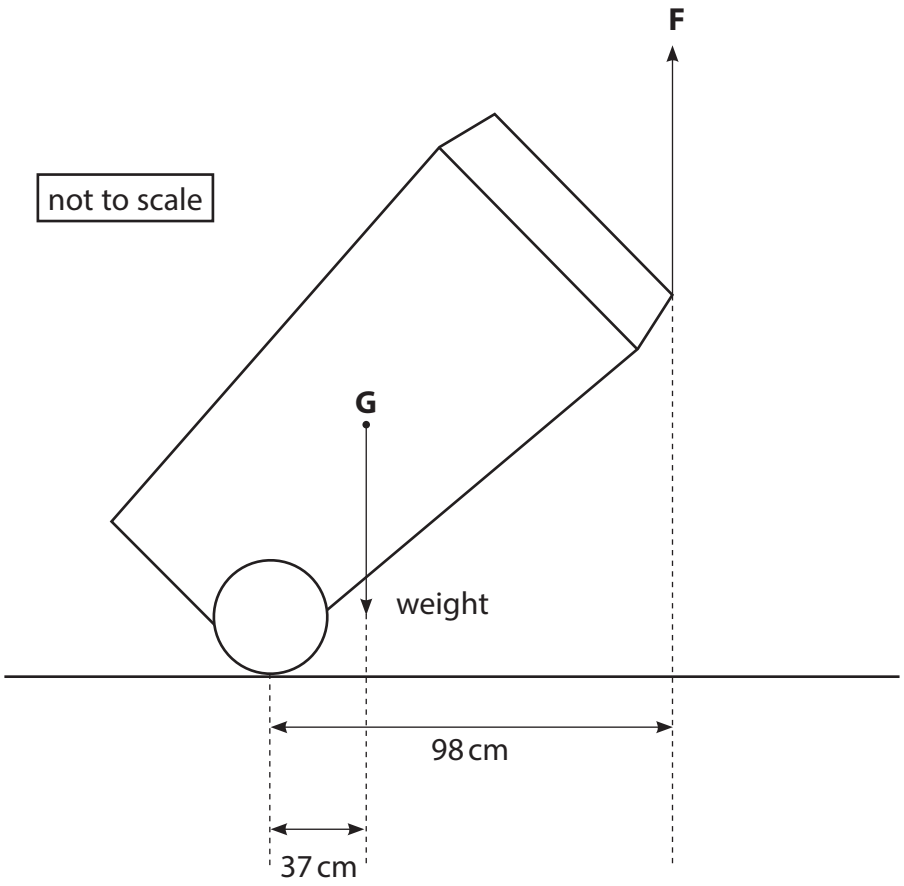
3 The diagram shows some of the forces acting on a large rubbish bin on wheels.



(a) The weight of the bin acts through point G.

Give the name of point G.

(1)

(b) The mass of the bin is 23 kg.

(i) What is the weight of the bin?

(1)

- ☒ **A** 23 kg
- ☒ **B** 230 kg
- ☒ **C** 230 N
- ☒ **D** 23 000 N

(ii) State the principle of moments.

(1)

.....

.....

(iii) A person applies force F to the bin to keep it stationary.

Calculate the magnitude of force F.

(4)

magnitude of force F = ... N

(iv) State the magnitude and direction of the force applied to the person by the bin.

(2)

magnitude = ... N

direction = ...

(Total for Question 3 = 9 marks)