M1. (a) from K to L

1

correct order only

The same as

1

smaller than

1

(c) 4 N

1

(d) the limit of proportionality is reached when a weight of 7N is added to the spring

accept any number from 6.8 to 7.2 inclusive

1

(e) the extension is directly proportional to the weight.

1

(f) C

1

[7]

M2. (a) **B** or bungee cords

1

C or springs or playground ride

*each additional answer loses **1** mark minimum mark zero*

1

will go back to original shape/size

1

(b) (i) newton

1

(ii) 0 – 5 (N) or 5

accept1 – 5 (N)
*do **not** accept 4*

1

(iii) 16 (cm)

1

(iv) 2.5 (N)

accept answer between 2.4 and 2.6 inclusive

1

[7]

##

(a) (i) plasticine stretches/snaps
stays stretched/snapped
for 1 mark each

2

(ii) spring compresses OWTTE
returns to **original** length/shape or gets longer
for 1 mark each

2

(iii) ruler bends/breaks
returns to original shape or stays broken
for 1 mark each

2

(b) (i) 1.5N
for 1 mark

1

(ii) 4 cm
for 1 mark

1

(iii) 19 cm
for 1 mark

1

[9]

M4. (a) plasticine stretches/snaps

stays stretched/snapped/same

for 1 mark each

2

(b) spring compresses OWTTE
returns to original length/gets longer

for 1 mark each

2

[4]