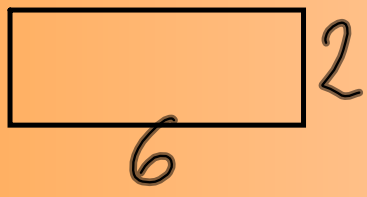
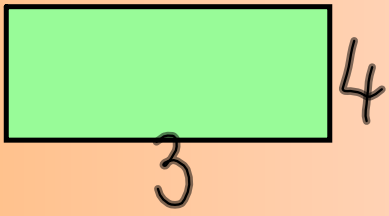
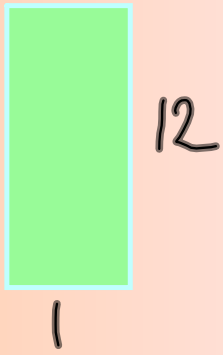
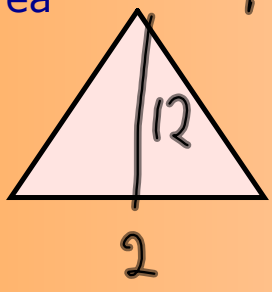
Draw 3 rectangles with area $12cm^2$.





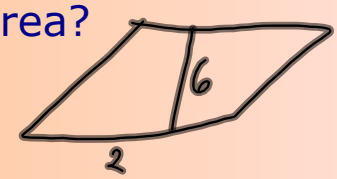


Draw a triangle with area $12cm^2$.



$$A = \frac{12 \times 2}{2}$$

Can you draw a parallelogram with the same area?



These 5 kittens weigh 500, 550, 600, 600, 750 grams.

Find 600

- the mode
- the median 600
- the mean $\frac{3000}{5} = 600$
- and the range in weights 750 - 500 = 250

May 17th Data sheet

Exam Prep

Work out how many bricks you will need for a wall without piers:

Length x ht x 60

a) 3m long and 1 m high $3 \times 1 \times 60 = 180$

b) 10m long and 2 m high $10 \times 2 \times 60 = 1200$

c) 14.5 m long and 1.7m high

$14.5 \times 1.7 \times 60$

$= 1479$ bricks

Work out how many bricks you will need if you build a wall 2 m high and 20 long if there are 5 piers.

Numbers of bricks in wall $= 20 \times 2 \times 60$

$= 2400$

No of extra bricks for each pier $= 2 \times 34 = 68$

For 5 piers $= 68 \times 5 = 340$

Total $= 2740$ bricks

Practice exam questions:

1. A wall with 3 piers has length 10m and height 2m. How many bricks will it need?

bricks $= 10 \times 2 \times 60 = 1200$

1 pier $= 2 \times 34 = 68$

3 piers $= 3 \times 68 = 204$

Total $= 1200 + 204 = 1404$

2. A wall with 5 piers has length 45m and height 3m. How many bricks will it need?

Bricks $= 45 \times 3 \times 60 = 8100$

1 pier $= 3 \times 34 = 102$

5 piers $= 5 \times 102 = 510$

Total $= 8100 + 510 = 8610$

(8marks each)

Piers are placed every 10m along a wall.

How many piers will you need for a wall

a) 30m long? $30 \div 10 = 3$ piers

b) 150m long $150 \div 10 = 15$ piers

c) 120m long $120 \div 10 = 12$ piers

This wall is 1.5m high and 40m long.
It has piers every 8m.
How many bricks will it need?

bricks in wall
$= 1.5 \times 40 \times 60$
$= 3600$

bricks per pier $= 1.5 \times 34 = 51$
No of piers $= 40 \div 8 = 5$
5 piers $= 5 \times 51 = 255$

Total no of bricks $= 3600 + 255$
$= 3855$

Practice exam question:

A wall is 2.5m high and 30m long.
It has piers every 6m.
Calculate the number of bricks needed.

(10 marks)

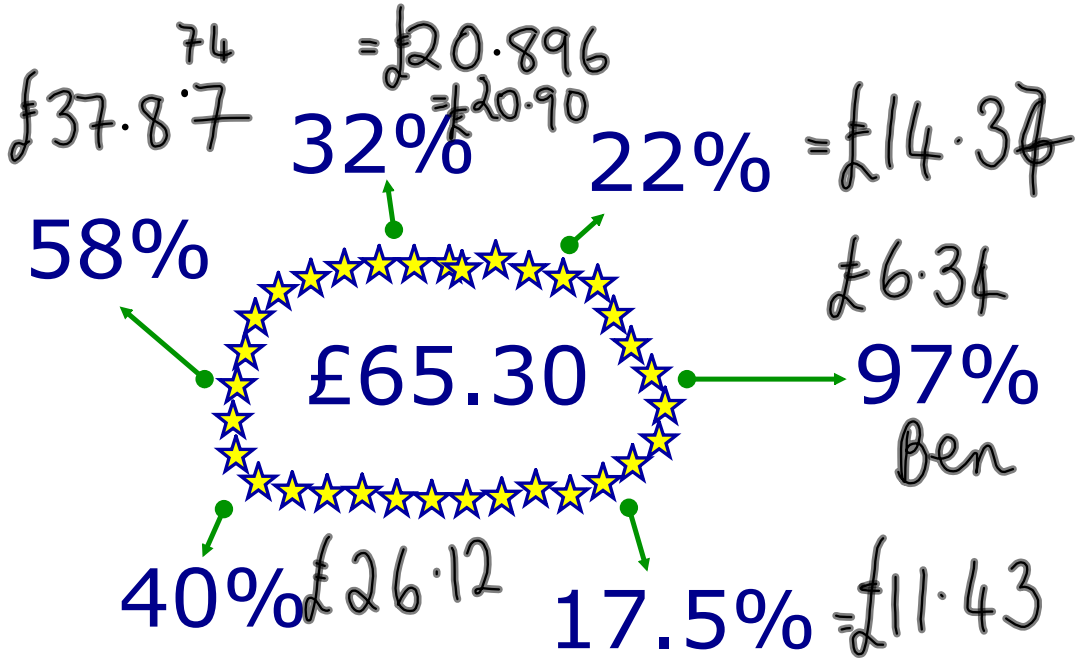
Bricks in wall = 2·5 x 30 x 60 = 4500
No of piers = 30 ÷ 6 = 5

Number of bricks= 4500

number of piers= 5
No of bricks in each pier = 2·5 x 34 = 85
extra bricks needed= 5 x 85 = 425

Total number of bricks= 4500 + 425 = 4925

Using a calculator work out:



Practice exam question:

A wall is 4m high and 25m long.
It has piers every 5m.
Calculate the number of bricks needed.

Number of bricks= $4 \times 25 \times 60$ **(10 marks)**

$= 6000$

number of piers= $25 \div 5 = 5$

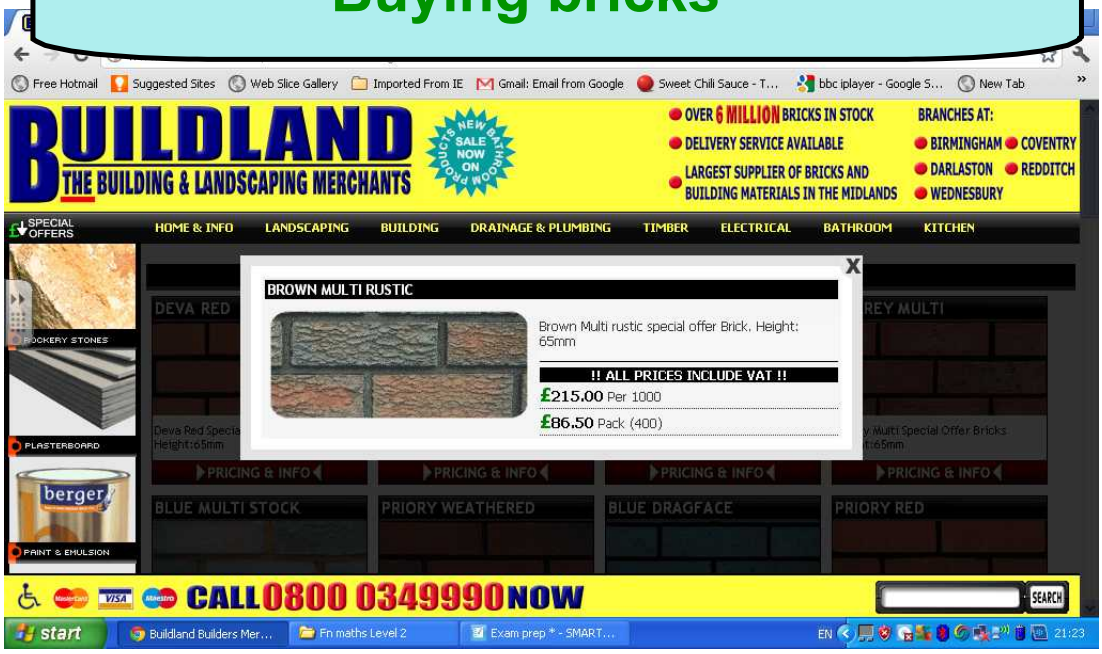
No of bricks in each pier = $4 \times 34 = 136$

extra bricks needed= $5 \times 136 = 680$

Total number of bricks= $680 + 6000$

$= 6680$ bricks

Buying bricks



These rustic bricks cost
£215.00 per 1000
or
£86.50 per 400

8 x 1000 packs
£1720

7360

7 x 1000 pack = £1505
1 x 400 pack = 86.50
£1591.50

What is the cheapest way of buying the bricks on the data sheet?

Work out the cheapest way of buying :

a) 2500 bricks

b) 3900 bricks

c) 9300 bricks

These rustic bricks cost
£215.00 per 1000
or
£86.50 per 400

2 × 1000 pack
2 × 400 packs
= £430 + £173
∴ £603

or

3 × 1000 packs
3 × £215 = £645

Buying 2 1000 packs and 2 400 packs is cheaper.

Exam question:

A wall is 21 m long and has height 2m.
It has piers every 7m.
Work out the cost of building it with blue multistock.

no of bricks = $21 \times 2 \times 60$
$= 2520$

no of piers = $21 \div 7 = 3$

no of bricks in each pier= $2 \times 34 = 68$

no of extra bricks = $3 \times 68 = 204$

Total number of bricks= $204 + 2520$
$= 2724$

Possibilities for buying:

Costs=

2×1000 pack $: 430$

2×400 pack $\underline{173}$

663

$3 \times 215 = 645$

3 of each is cheapest

You decide to make a walled garden of area 30m^2. The height of the wall is 1.5m and there are 4 piers.
Can you build it for £550?

Bricks:
£215.00 per 1000
£86.50 per 400

You decide to make a walled garden of area 40m^2. The height of the wall is 1m and there are 6 piers.
Can you build it for £550?

Bricks:
£215.00 per 1000
£86.50 per 400

Maximum Heart rate

Find the maximum heart rate for a 16 year old.

Method 1
method 2
method 3

220 − 16 = 204

208 − (0.7 × 16) = 196.8

0.007 × 16^2 = 1.792

191.5 − 1.792 = 189.708

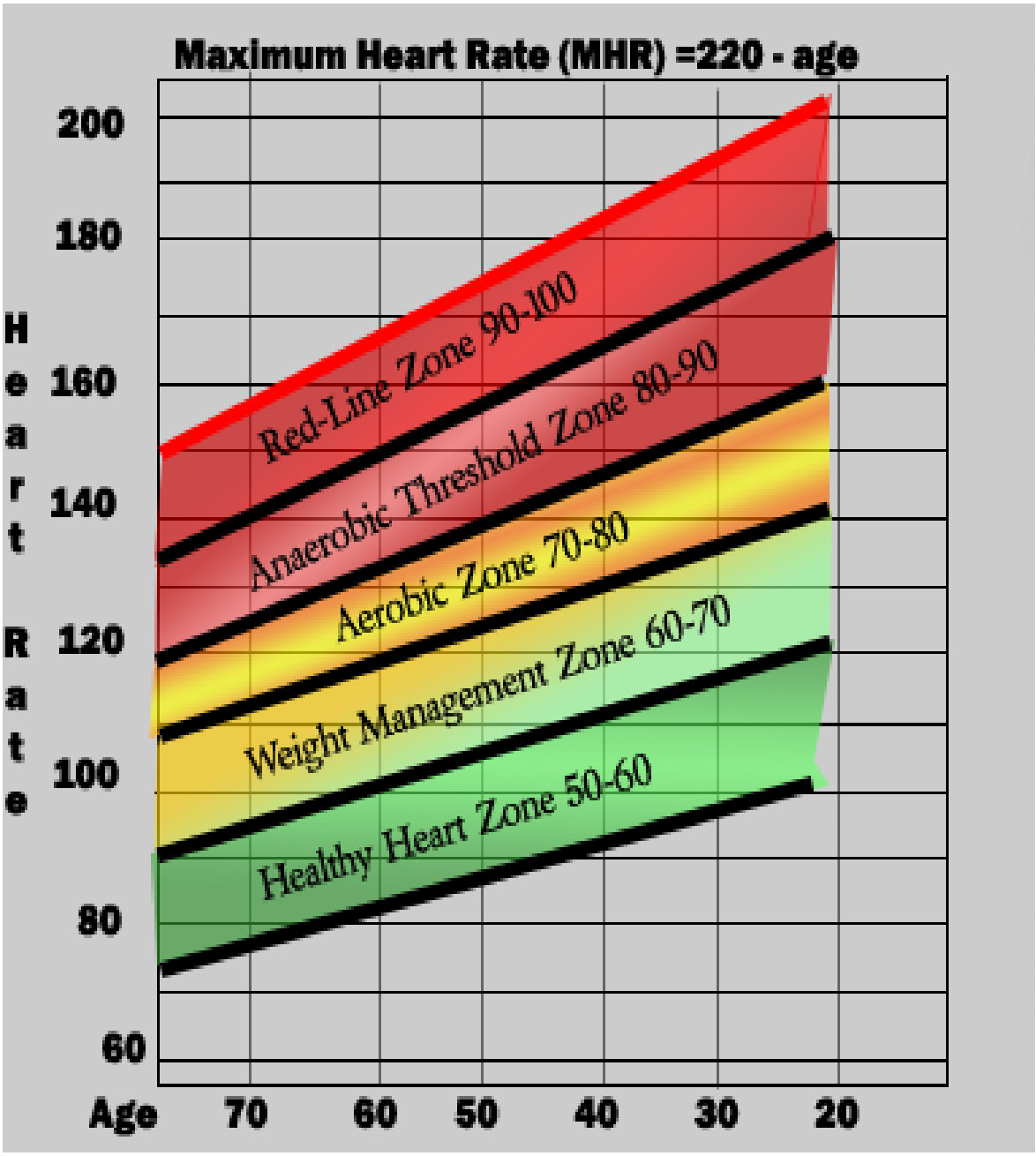
Fred is 30 years old . Find his maximum heart rate.

Method 1: 220 − 30 = 190

2: 208 − (0.7 × 30) = 187

3: 63

191.5 − 6.3 = 185.2


Maximum Heart Rate (MHR) =220 - age
Heart Rate
200
180
160
140
120
100
80
60
Age
70
60
50
40
30
20
Red-Line Zone 90-100
Anaerobic Threshold Zone 80-90
Aerobic Zone 70-80
Weight Management Zone 60-70
Healthy Heart Zone 50-60

Jane is 40 and has a maximum heart rate of 120.
Is she burning calories?

James is 70 and has a maximum heart rate of 160. Is that safe?

Target Heart rate

Your targ
maximun

Find the

MHR method 1 $220 - 25 = 195$

THR $\frac{65}{100} \times 195 = 126.75$

MXR : $208 - (0.7 \times 25) = \cancel{124.02}\ 190.5$

THR : $\frac{65}{100} \times 190.5 = 124.02$

Find the

MHR $0.007 \times 25^2 = 4.375$

$191.5 - 4.375 = 187.125$

Find, with a calculator,

63%

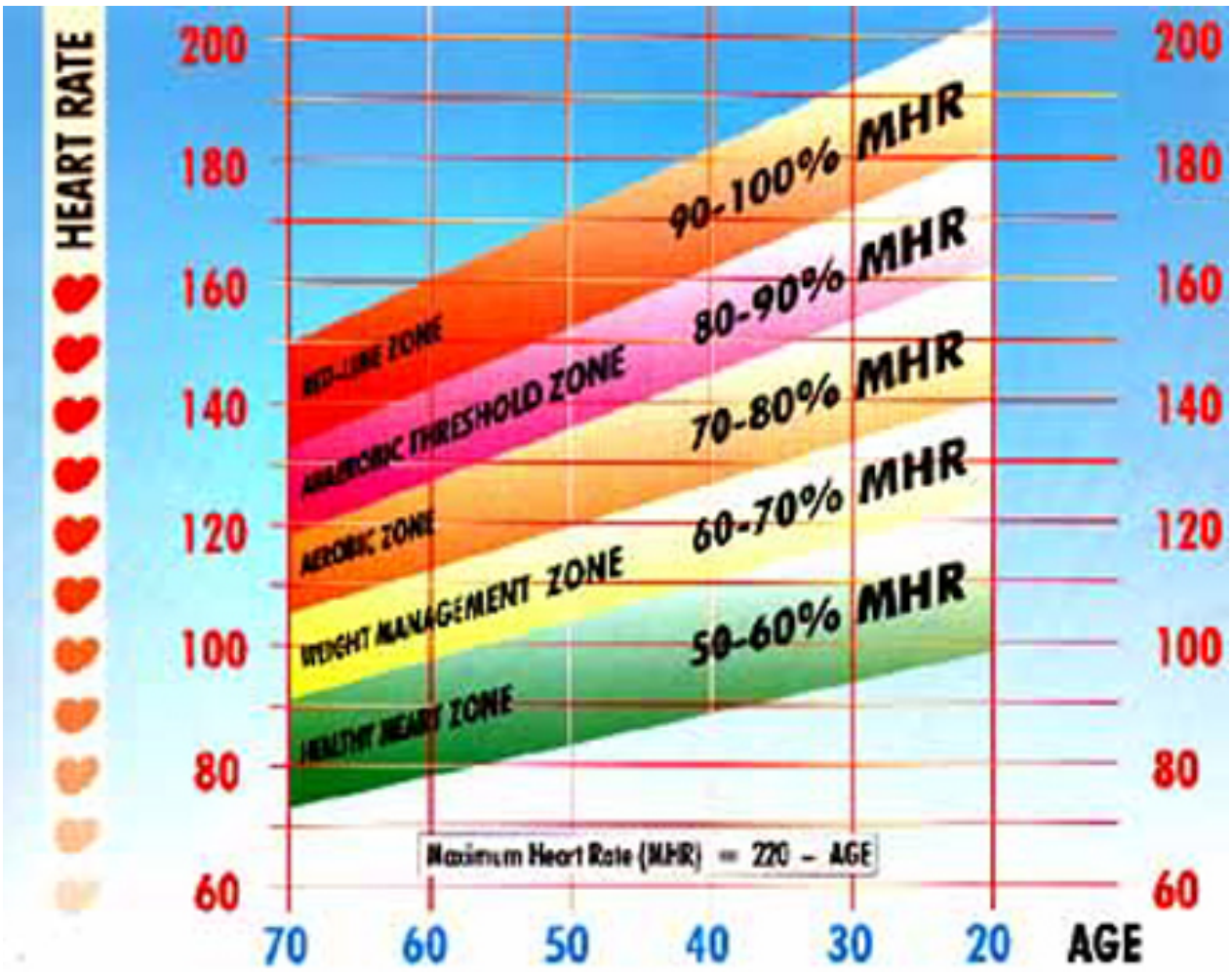
65% **64.5%**

140

66%

71%

70%


HEART RATE
200
180
160
140
120
100
80
60
90-100% MHR
80-90% MHR
70-80% MHR
60-70% MHR
50-60% MHR
RED-LINE ZONE
ANAEROBIC THRESHOLD ZONE
AEROBIC ZONE
WEIGHT MANAGEMENT ZONE
HEALTHY HEART ZONE
Maximum Heart Rate (MHR) = 220 – AGE
70
60
50
40
30
20
AGE