

### Error Bounds

Find the maximum and minimum values for the following numbers

120 to the nearest 10	80 to the nearest 20	65 to the nearest 5	8 to the nearest whole number
3.5 to 1 d.p.	270 to the nearest 30	23100 to the nearest 100	0.7 to 1 d.p.
300 to 1 s.f.	420 to 2 s.f.	1.8 to 2 s.f.	32.1 to 3 s.f.

### Problems in context

- 1) Pencil has a length of 15cm to the nearest cm. What is the maximum total length of 10 of these pencils?
- 2) A rectangle has dimensions 5cm and 4cm to the nearest cm.
  - a) What is the maximum and minimum possible perimeter?
  - b) What is the maximum and minimum possible area of this rectangle?
- 3) Jack fills a cup with water. The amount of water he puts in is 310 ml to the nearest 10ml. The cup can hold 400ml to the nearest 10ml. What is the maximum amount of water that could still be put into the cup

### Pure Problems

$$x = 1.5 \text{ (1 dp)} \quad y = 3.25 \text{ (2 dp)}$$

What are the maximum and minimum values of the following expressions:

- a)  $x$
- b)  $y$
- c)  $xy$
- d)  $\frac{x}{y}$
- e)  $x^2y$