

2 of 2

3) If  $f(x) = 2x^3 + px^2 + 5x + 6$  is divided by  $x-2$ , it leaves a remainder of  $-20$ . Determine the value of  $p$ .

PAGE 9  
9 SOLUTION:

$$x-2=0$$

$$x=2$$

$$f(2) = -20$$

$$f(2) = 2(2)^3 + p(2)^2 + 5(2) + 6$$

$$f(2) = 16 + 4p + 10 + 6$$

$$f(2) = 4p + 32$$

$$\therefore 4p + 32 = -20 \quad [\text{Both} = f(2)]$$

$$4p = -52$$

$$\frac{4p}{4} = \frac{-52}{4}$$

$$p = -13$$