

## 11. **Worked Example 11** **Using the Binomial Theorem**

(Problem 10)

### **Solution**

$$\begin{aligned} (x^2 + 2)^{10} &= \sum_{k=0}^{10} \binom{10}{k} (x^2)^{10-k} (2)^k \\ &= \sum_{k=0}^{10} \binom{10}{k} x^{2(10-k)} 2^k \end{aligned}$$

## 12. **Worked Example 12** **Using the Binomial Theorem**

(Problem 11)

### **Solution**

$$\begin{aligned} (x^2 + 2)^{10} &= \sum_{k=0}^{10} \binom{10}{k} (x^2)^{10-k} (2)^k \\ &= \sum_{k=0}^{10} \binom{10}{k} x^{2(10-k)} 2^k \end{aligned}$$

## 13. **Worked Example 13** **Using the Binomial Theorem**

(Problem 12)

### **Solution**

$$\begin{aligned} (x^2 + 2)^{10} &= \sum_{k=0}^{10} \binom{10}{k} (x^2)^{10-k} (2)^k \\ &= \sum_{k=0}^{10} \binom{10}{k} x^{2(10-k)} 2^k \end{aligned}$$