 **Methods 11 Test 1 2017**

**Indices, Exponential Equations, Significant Figures**

**Time Allowed: 55 minutes Total Marks: 52**

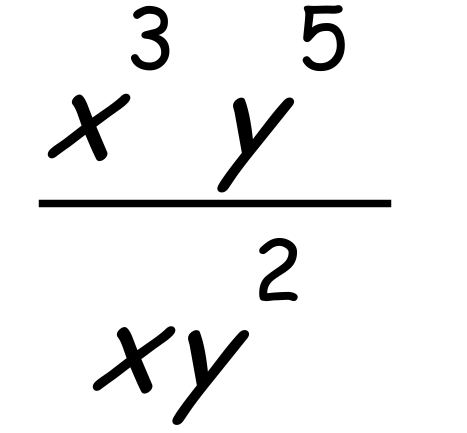
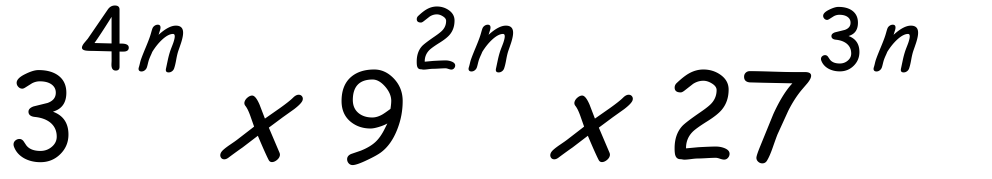
**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

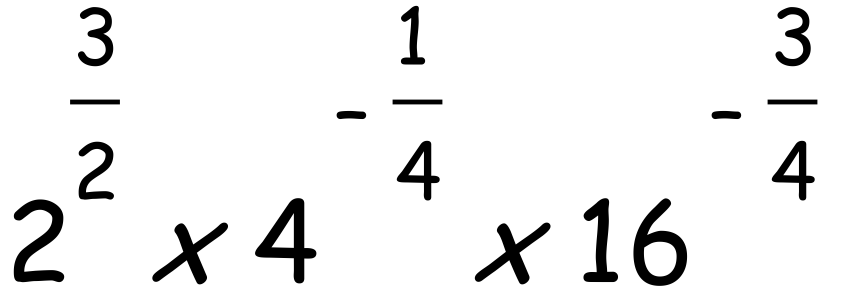
**Resource Free**

**ALL** working must be shown for full marks.

**1.** **[2, 3, 3, 3 = 11 marks]**

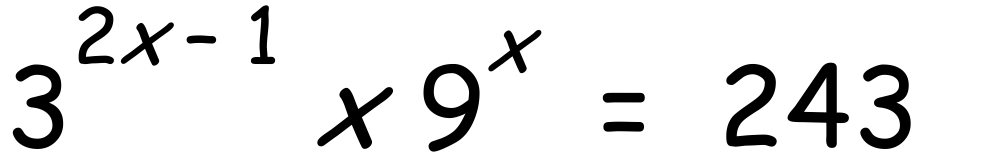
Write each in simplest form with positive indices.

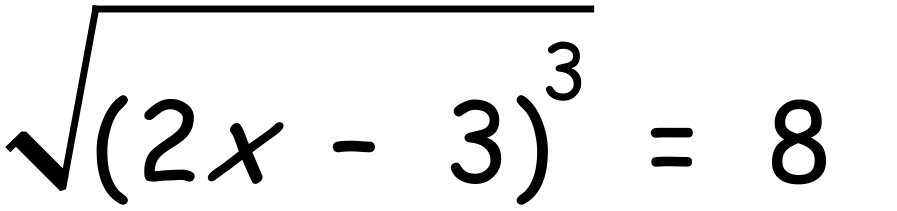
a)  b) 

c) d) 

**2.** **[4, 3, 3, 3 = 13 marks]**

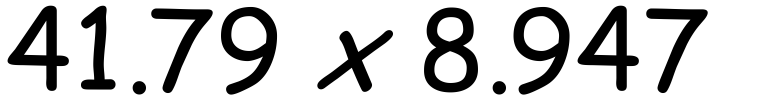
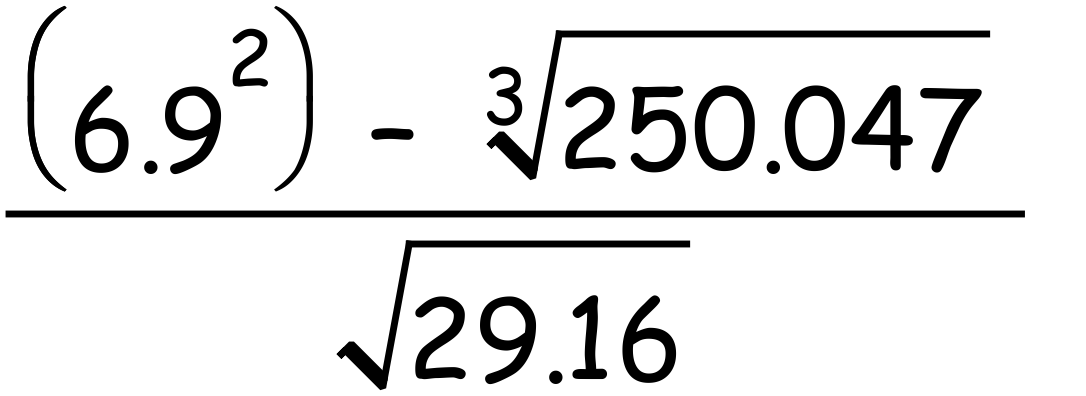
Solve the following exponential equations:

a)  b) 

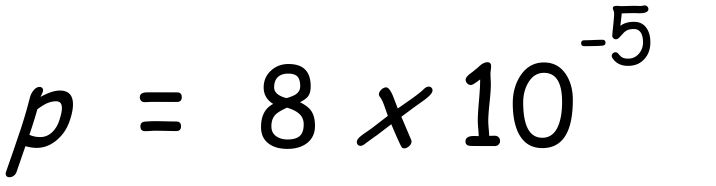
c)  d) 2

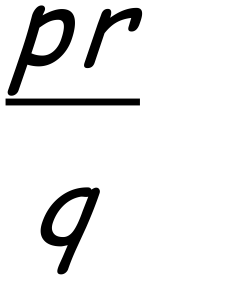
**3. [2, 3 = 5 marks]**

Estimate the numerical value of the following by rounding to one significant figure:

a)  b) 

**4. [3, 2, 2, 2 = 9 marks]**

Given that  , and , determine each of the following giving exact answers in standard form.

a) pqr b) 

c) p – r d) q + p

**5. [4 marks]**

Write each number in scientific notation correct to 3 significant figures.

a) 251 000

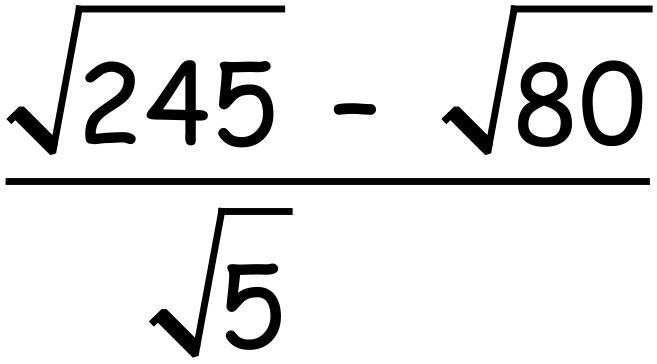
b) 4 827 000

c) 0.00708

d) 3 millionths

**6. [4, 6 = 10 marks]**

Simplify:

a)  b)