

**INTENSIVE MATHEMATICS (PBM1035)**  
**Session December 2017**  
**SELF-EXERCISE 15**

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Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working. You may use a non-programmable scientific calculator.

Differentiate each function with respect to  $x$ .

1.  $y = -2x$
2.  $y = 4x^2$
3.  $y = -\frac{1}{x^2}$
4.  $y = 3x^2$
5.  $y = \frac{5}{x^4}$
6.  $y = \sqrt{x}$
7.  $y = -3x^{-3}$
8.  $y = \frac{1}{6x^2}$
9.  $y = \frac{1}{2}x^2$
10.  $y = -\frac{2}{3x}$