Class Test 4

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Answer all questions. Show your working clearly.

1. Expand and simplify each of the following expressions.
   (a) $(8x + 1)(2x + 3)$ [1]
   (b) $-3(4 - x)(2x - 1)$ [1]

2. Factorise each of the following expressions completely.
   (a) $-3y^2 - 17y + 6$ [1]
   (b) $27x^2 + 18x + 3$ [1]

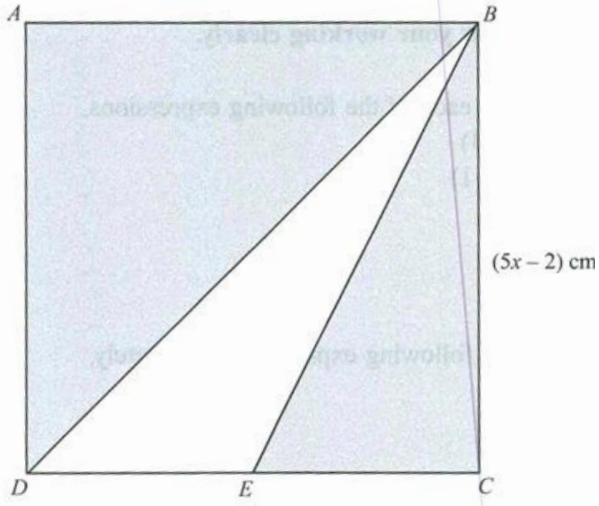
3. Factorise the following expression completely.
   $\frac{8}{3}x^2 + \frac{5}{3}x - 1$ [2]

4. Expand and simplify $-4(2x + 5)^2 + 2(2 - x)(5 + 3x)$. [2]

5. The distance between X and Y is $(5p^2 + 7p + 2)$ km. Jimmy travels from X to Y at a constant speed of $(5p + 2)$ km/h. Show that the time taken for his journey is $(p + 1)$ hours. [2]

6. (a) Factorise completely $-\frac{5}{3}a^2 - \frac{11}{3}a + 4$. [2]
   (b) Hence, evaluate $-\frac{5}{3}(2)^2 - \frac{11}{3}(2) + 4$. [2]

7. In the figure below, $ABCD$ is a square with side $(5x - 2)$ cm. E is the midpoint of CD. Find and simplify an expression for the shaded area, in terms of x. [3]



8. The length of a rectangular block is 7 cm more than its breadth and the height is 2 cm less than its breadth. Given that the breadth of the rectangular block is w cm, find an expression, in terms of w, for the total surface area of the rectangular block. [3]