Show all working – <u>NO</u> calculator required.
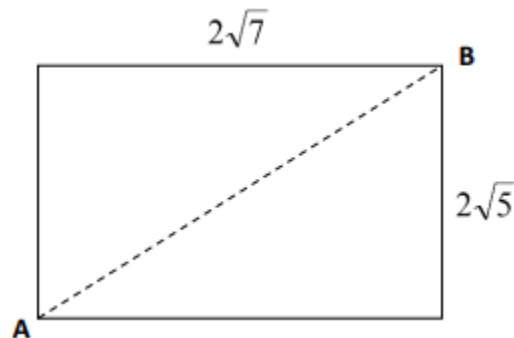
<u>**Marks**</u>

1. Express the following as a surd in its simplest form: $\sqrt{45} - 2\sqrt{5} + \sqrt{125}$ **(3)**

2. Express the following with rational denominators: $\dfrac{\sqrt{3}}{2\sqrt{6}}$ **(3)**

3. Find the length of the diagonal, AB, of this rectangle leaving your answer as a surd in its simplest form.

(4)

4. Simplify $\dfrac{3y^5 \times 4y^2}{8y^3}$ **(3)**

5. Evaluate $81^{3/4}$ **(2)**

6. Simplify fully $x^{3/4}\left(x^{2/3} - x^{-3/4}\right)$ **(3)**

7. Simplify fully $\left(\dfrac{3}{5}x^3\right)^2$ **(2)**

<u>**Total Marks: 20**</u>