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Quiz 3

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. pg.32#5q *(4 marks)* Simplify:

$$2\sqrt{125} - 4\sqrt{45} - 6\sqrt{20}$$

$$= 2\sqrt{25 \cdot 5} - 4\sqrt{9 \cdot 5} - 6\sqrt{4 \cdot 5}$$

$$= 2\sqrt{25}\sqrt{5} - 4\sqrt{9}\sqrt{5} - 6\sqrt{4}\sqrt{5}$$

$$= 2 \cdot 5\sqrt{5} - 4 \cdot 3\sqrt{5} - 6 \cdot 2\sqrt{5}$$

$$= 10\sqrt{5} - 12\sqrt{5} - 12\sqrt{5}$$

$$= -14\sqrt{5}$$

Question 2. pg.39#14 *(3 marks)* Find two consecutive integers such that 3 times the smaller one is 15 more than double the larger one:

Let x be the first integer then the next integer is x + 1

$$3x = 2(x+1) + 15$$
$$3x = 2x + 2 + 15$$
$$x = 17$$

∴ the integers are 17, 18.

Question 3. pg.44#2i *(3 marks)* Solve for x:

$$8x^3 + 25x = 30x^2$$

$$0 = 8x^3 - 30x^2 + 25x$$
$$0 = x(8x^2 - 30x + 25)$$
$$0 = x(8x^2 - 10x - 20x + 25)$$
$$0 = x(2x(4x-5) - 5(4x-5))$$
$$0 = x(2x-5)(4x-5)$$

$$x = 0 \qquad x = \frac{5}{2} \qquad x = \frac{5}{4}$$

$$8x^2(25) = 200x^2 = ab$$
$$s.t. \quad a + b = -30x$$
$$-10x - 20x = -30x$$