PRACTICE QUESTIONS 4

Solve the following equations:

a) $||x - 1| + 2| = 3$ b) $|2|x + 1| - 4| = 1$

c) $3|2|x - 1| - 5| = 6$ d) $|x + 1| + |x - 6| = 9$

e) $|x + 2| + |x - 7| = 3$ f) $2|3 - x| - 2|x + 1| = 1$

Solve the following inequalities

a) $3|x - 5| - 6 > 0$ b) $2|x + 1| - 5 < 0$

c) $||x - 1| - 5| > 3$ d) $|2|x + 2| - 6| < 1$

e) $|x + 4| + |x - 5| < 11$ f) $2|x - 1| - |5 - 2x| > 1$

Solve the following equations

a) $(2x + 2)^2 - (x + 1)(2x - 3) = (2x + 1)(x - 2)$

b) $(x - 1)^2 + (3x - 1)(x + 2) = (2x - 1)^2$

c) $(2 - x)(x + 2) + (3x + 4)(x - 7) = (x + 2)^2 + (x + 3)^2$

Simplify the following expressions

a) $\dfrac{\sqrt{150} - 2\sqrt{294} + 3\sqrt{726}}{\sqrt{27} - 2\sqrt{192} + 5\sqrt{432}}$

b) $\dfrac{5\sqrt{392} - \sqrt{162} + 3\sqrt{8}}{\sqrt{175} - \sqrt{252} + 2\sqrt{448}}$

c) $\dfrac{\sqrt[3]{48} - \sqrt[3]{750} + \sqrt[3]{1296}}{\sqrt[3]{54} - \sqrt[3]{1458} + 5\sqrt[3]{686}}$