

### S5/6 National 5 Maths Homework 13

1. Solve these quadratic equations.

a)  $m^2 - m - 12 = 0$     b)  $y^2 + 3y - 10 = 0$     c)  $x^2 + x - 12 = 0$   
d)  $v^2 - 4v = 0$     e)  $2a^2 + 3a + 1 = 0$     f)  $9k^2 - 6k - 8 = 0$

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2. Evaluate

a)  $4.6 - 27.6 \div 40$     b)  $66\frac{2}{3}\%$  of £144    c)  $\frac{2}{3}$  of  $(\frac{1}{2} - \frac{1}{5})$

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3.  $f(x) = 2x - 3x^3$ . Find the value of  $f(-2)$ .

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4. a) Simplify  $2\sqrt{27} - \sqrt{12}$

b) Express with a rational denominator  $\frac{4}{\sqrt{10}}$

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5. Expand the brackets and simplify

a)  $(x + 2)(x - 1)^2$     b)  $(2y - 3)(y + 2)(1 - y)$

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6. Solve a)  $3(2x - 4) > 6$     b)  $4(2n + 1) = 5(n - 1)$

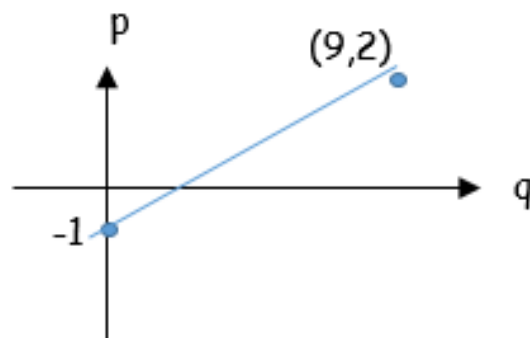
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7. Work out

a)  $\frac{1}{d} + \frac{1}{e}$     b)  $\frac{9}{d} + \frac{5}{e}$     c)  $\frac{2}{3a} - \frac{1}{a}$     d)  $\frac{3v}{w} - \frac{4v}{w^2}$     e)  $\frac{3}{y^2} + \frac{4}{3y}$

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8. Find the equation of the line opposite in terms of  $p$  and  $q$



9. Solve, leaving your answer correct to 1 dp.

a)  $x^2 + 3x - 3 = 0$     b)  $2x^2 - 7x + 4 = 0$