Introduction to algebra - Worksheet 1

If the value of $a = 2$, $b = 3$ and $c = 4$, evaluate the following:

1. $a^2 = 4$
2. $ab^3 = 54$
3. $2a^2c = 32$
4. $5a^2 + 6b^2 = 74$
5. $a^2 + c^2 = 20$
6. $\dfrac{3a^4}{c^2} = 3$
7. $\dfrac{c^5}{ab^3} = \dfrac{512}{27}$
8. $\dfrac{6a^3 + 4b^2}{2c^2} = \dfrac{21}{8}$

Introduction to algebra - Worksheet 2

Simplify the following where appropriate:

1. $3x + 4x^2 - 2x + x^3 = x^3 + 4x^2 + x$
2. $5a^3 - 2a^3 + 6a = 3a^3 + 6a$
3. $3a + 4b - 3c = 3a + 4b - 3c$
4. $4a + 3a^2 - 2a^2 = a^2 + 4a$
5. $2b^3 - 4b^3 + 2b^3 = 0$
6. $4ab + 2ba - 5ba = ab$
7. $3xy + 5yx - 2xy^3 = -2xy^3 + 8yx$
8. $7abc - 3bca + 5bac = 9abc$
9. $4ab - 2a^2b + 2ab^2 = 4ab - 2a^2b + 2ab^2$

Law of indices   - Worksheet 1

Simplify the following:

1. $x^2 \times x^4 = x^6$
2. $a^3 \times x^5 = a^3 x^5$
3. $p^{-3} \times p^2 = p^{-1}$
4. $y^{-3} \times y^{-4} = y^{-7}$
5. $a^5 \times a^4 \times a^{-3} = a^6$
6. $p^{-3} \times p^{-2} \times p^4 = p^{-1}$
7. $x^2 \times x^{-3} \times x^4 \times x^{-2} = x$
8. $a^{-2} \times a^{-4} \times a^{-2} \times a^5 = a^{-3}$

Law of indices   - Worksheet 2

Simplify the following:

1. $9x^5 \div 3x^2 = 3x^3$
2. $8x^3 \div 2x^{-5} = 4x^8$
3. $y^{-3} \times y^{-2} \div y^3 = y^{-8}$
4. $x^{-4} \times x^{-3} \div x^{-5} = x^{-2}$
5. $(x^3)^2 = x^6$
6. $(y^5)^3 = y^{15}$
7. $(2a^3)^4 = 16a^{12}$
8. $(3y^{-2})^{-2} = 0.111y^4$