

TS Tuition Math - Hwk #1 - Algebra (Ch. 2)**Revision exercise 2A**

1. Solve the equations:

(a) $x + 4 = 3x + 9$

(b) $9 - 3a = 1$

(c) $y^2 + 5y = 0$

(d) $x^2 - 4 = 0$

(e) $3x^2 + 7x - 40 = 0$

2. Given $a = 3$, $b = 4$ and $c = -2$, evaluate:

(a) $2a^2 - b$

(b) $a(b - c)$

(c) $2b^2 - c^2$

3. Factorise completely:

(a) $4x^2 - y^2$

(b) $2x^2 + 8x + 6$

(c) $6m + 4n - 9km - 6kn$

(d) $2x^2 - 5x - 3$

4. Solve the simultaneous equations:

(a) $3x + 2y = 5$

(b) $2m - n = 6$

$2x - y = 8$

$2m + 3n = -6$

(c) $3x - 4y = 19$

(d) $3x - 7y = 11$

$x + 6y = 10$

$2x - 3y = 4$

5. Given that $x = 4$, $y = 3$, $z = -2$, evaluate:

(a) $2x(y + z)$

(b) $(xy)^2 - z^2$

(c) $x^2 + y^2 + z^2$

(d) $(x + y)(x - z)$

(e) $\sqrt{x(1 - 4z)}$

(f) $\frac{xy}{z}$

6. (a) Simplify $3(2x - 5) - 2(2x + 3)$.(b) Factorise $2a - 3b - 4xa + 6xb$.(c) Solve the equation $\frac{x - 11}{2} - \frac{x - 3}{5} = 2$.

7. Solve the equations:

(a) $5 - 7x = 4 - 6x$

(b) $\frac{7}{x} = \frac{2}{3}$

(c) $2x^2 - 7x = 0$

(d) $x^2 + 5x + 6 = 0$

(e) $\frac{1}{x} + \frac{1}{4} = \frac{1}{3}$

8. Factorise completely:

(a) $x^3 - 16z$

(b) $x^2y^2 + x^2 + y^2 + 1$

(c) $2x^2 + 11x + 12$

9. Find the value of $\frac{2x - 3y}{5x + 2y}$ when $x = 2a$ and $y = -a$.

10. Solve the simultaneous equations:

(a) $7c + 3d = 29$	(b) $2x - 3y = 7$
$5c - 4d = 33$	$2y - 3x = -8$
(c) $5x = 3(1 - y)$	(d) $5s + 3t = 16$
$3x + 2y + 1 = 0$	$11s + 7t = 34$

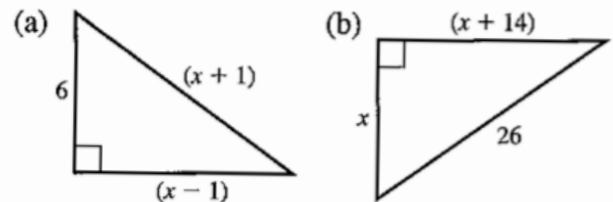
11. Solve the equations:

(a) $4(y + 1) = \frac{3}{1 - y}$
 (b) $4(2x - 1) - 3(1 - x) = 0$
 (c) $\frac{x + 3}{x} = 2$
 (d) $x^2 = 5x$

12. Solve the following, giving your answers correct to two decimal places.

(a) $2x^2 - 3x - 1 = 0$	(b) $x^2 - x - 1 = 0$
(c) $3x^2 + 2x - 4 = 0$	(d) $x + 3 = \frac{7}{x}$

13. Find x by forming a suitable equation.

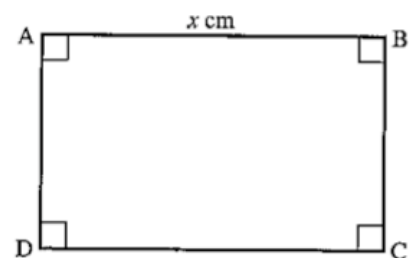


14. Given that $m = -2$, $n = 4$, evaluate:

(a) $5m + 3n$	(b) $5 + 2m - m^2$
(c) $m^2 + 2n^2$	(d) $(2m + n)(2m - n)$
(e) $(n - m)^2$	(f) $n - mn - 2m^2$

15. A car travels for x hours at a speed of $(x + 2)$ km/h. If the distance travelled is 15 km, write down an equation for x and solve it to find the speed of the car.

16. ABCD is a rectangle, where $AB = x$ cm and BC is 1.5 cm less than AB.



If the area of the rectangle is 52 cm^2 , form an equation in x and solve it to find the dimensions of the rectangle.

17. Solve the equations:

(a) $(2x + 1)^2 = (x + 5)^2$
 (b) $\frac{x + 2}{2} - \frac{x - 1}{3} = \frac{x}{4}$
 (c) $x^2 - 7x + 5 = 0$, giving the answers correct to two decimal places.