

REVIEW EXERCISE – LEVEL 1

1. (a) A car travels K km/h for x hours. How far does it travel?
 (b) Two angles of a triangle are x° and y° . What is the size of the third angle?
 (c) Three people have $\$x$, $\$y$ and $\$z$ respectively. What is their average wealth?

2. If $x = 5$ and $y = -2$, find the value of:
 (a) $3x + 4y$ (b) $x^2 + y^2$ (c) $\frac{1}{2}x - 3y$ (d) $4x^2 - 2y^3$

3. If $v = u + at$, find
 (a) v if $u = 46$, $a = 98$ and $t = 7$
 (b) v if $u = 0$, $a = -15$ and $t = 13$
 (c) u if $v = 58$, $a = 10$ and $t = 9$

4. Simplify:
 (a) $5x + 3x^2 - 2x + 6x^2$ (b) $p^2 + 2p - 5 - 6p + 3p^2$
 (c) $6xy - 5x + 4y - 3xy$ (d) $x^2 + 3y + 3xy - x^2 + 5xy$

5. Simplify:
 (a) $5a \times b \times 3c$ (b) $6p \times 4q \times \frac{1}{2}p$ (c) $3xy \times -5x$
 (d) $16mn \div 2n$ (e) $4x^2y \div 2x$ (f) $24abc \div 2ac$

6. Expand the following:
 (a) $5(x + 2)$ (b) $3(2a - 1)$ (c) $2y(y + 3)$
 (d) $4(3 - x)$ (e) $-2(m + n)$ (f) $b(2 - 3b)$

7. Solve these equations:
 (a) $x - 5 = 4$ (b) $2a = 17$
 (c) $\frac{x}{3} = 8$ (d) $\frac{x+2}{4} = 3$
 (e) $4a + 5 = 1$ (f) $3a - 7 = 9$

REVIEW EXERCISE – LEVEL 2

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1. Write the simplest algebraic expression for each of the following:

- (a) The perimeter of a square with side x cm.
 (b) The perimeter of a rectangle with sides $x + 3$ and $x + 4$.
 (c) The area of a square with side $3x$.
 (d) The area of a rectangle with sides $5x$ and $2y$.

2. If $p = 6$, $q = 2$, $r = 4$ and $s = 3$, find:

- (a) $ps + qr$ (b) pqr (c) $\sqrt{2p+r}$
 (d) $2(p+q) - r^2$ (e) $5r + 2q - 3s$ (f) $\frac{1}{2}pq + \frac{1}{3}rs$

3. Simplify:

- (a) $-2xy + 5y \times 3x + 6x - y$ (b) $-3mn \div 2m + 4n - m$
 (c) $2a + 15a^2b \div 3ab - 2ab$ (d) $8x^2 \times (-3xy^2) \div (-6xy)$

4. Expand and simplify:

- (a) $3x(2x + 5) + 4x$ (b) $-x(2 - x) + x$
 (c) $\frac{1}{2}(4x - 3) - 5x$ (d) $-\frac{3}{4}(3x + 2) - 2$
 (e) $2x\left(\frac{2x+1}{3}\right)$ (f) $-(6x-5) - (2x-3)$

5. Solve these equations:

- (a) $4(3x - 5) = 16$ (b) $5x + 16 = 9x - 4$
 (c) $12x + 15 = 7 - 4x$ (c) $\frac{3x+1}{5} = \frac{x+2}{2}$

6. The Rent-a-Bomb Car Hire Company charges a basic fee of \$35 plus \$80 per day. Frank hires a car and pays a total of \$755 at the end.

- (a) Write an equation to represent the above information.
 (b) For how many days did Frank hire the car?

REVIEW EXERCISE – LEVEL 3

- (a) If x apples cost a total of $\$y$, what is the cost of z apples?

(b) The price of bricks increases from $\$x$ /tonne to $\$y$ /tonne. Before the price rise, the cost of bricks for an average house was $\$H$. What is the new cost of bricks for an average house?
- If $x = \frac{1}{2}$, $y = \frac{2}{3}$ and $z = \frac{3}{4}$, evaluate:

(a) $\frac{x}{y} + z$ (b) $\sqrt{\frac{xy}{z}}$ (c) $\frac{x^2}{z} \times \frac{2}{y}$
- Expand and simplify:

(a) $x(x+y) + y(x-y)$ (b) $\frac{1}{2}(x+3) + \frac{1}{4}(x+2)$
- (a) If $c^2 = a^2 + b^2$ and $a = 27$ and $b = 36$, find c .

(b) If $s = ut + \frac{1}{2}at^2$, $u = 7$, $a = -5$ and $t = 10$, find s .

(c) If $S = \frac{1}{2}[2a + (n-1)d]$, $n = 25$, $a = 7$ and $d = 8$, find S .
- In the equation $v = 12 + 5t$, make t the subject.
- Solve these equations:

(a) $\frac{2(3x-1)}{5} + 4 = 16$ (b) $5(2x-1) = x+4$

(c) $\frac{x}{3} + \frac{x}{4} = 12$ (d) $x^2 - 1 = 8$

(e) $\sqrt{x-1} = 8$ (f) $\sqrt{x-1} = 8$

(g) $\sqrt[3]{4x+2} = 2$ (h) $2x^3 + 7 = 61$

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