

Student No.:	Date: / /	Score:
Student Name:		/25

Revision of Algebraic Fractions and Formulae (I)

Exercises

1. Simplify each of the following algebraic fractions.

(a) $\frac{15a + 5}{9a + 27a^2}$

(b) $\frac{x^2}{12y^3} \times \frac{6y}{xz}$

(c) $\frac{ax - by + bx - ay}{8a + 8b}$

(d) $\frac{5x + 15y}{5xy}$

(e) $\frac{x^3}{yz + 2z} \div \frac{x^2y + 2x^2}{y + 2}$

(f) $5 - \frac{4}{2x + 3}$

(g) $\frac{7r}{3r - 2} + \frac{r + 4}{2 - 3r}$

(h) $\frac{2k}{-k + h} - \frac{h}{h - k}$

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2. It is given that $E = I(R+r)$. If $R=2$, $r=1$ and $I=3$, find E .

3. It is given that $S = \pi r(r^2 + h^2)$. If $r=8$ and $h=24$, find S in terms of π .

4. Given that $y = \frac{4}{5(2-x)}$, find the value of x if $y = 2$.

5. (a) Factorize $3ac + bd + ad + 3bc$.

(b) **Harder** From the result of (a), simplify $\frac{3ac + bd + ad + 3bc}{4a^2 - 4b^2}$.

6. In each of the following, make the letter in brackets the subject of the formula.

(a) $a = 6 + \frac{b}{2}$ [b] (b) **Harder** $C = P\left(1 + \frac{RT}{200}\right)$ [R]

(c) $y = \frac{z}{10x} - \frac{1}{3x}$ [x] (d) $x = \frac{a + bk}{3 + k}$ [k]

(e) $a = b - 3cd$ [c] (f) $F = \frac{mv^3}{r}$ [m]

7. There are level one and level two questions in a quiz. If a participant answered x level one and y level two questions correctly within the time limit, a score of M would be obtained, where $M = 15x + 27y$.

(a) If Joyce answered 5 level one questions and 6 level 2 questions correctly, what would be her score?

(b) If Mary answered 7 level one questions correctly and obtained a score of 267, how many level two questions did she answer correctly?

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M.C.

1. Simplify $\frac{2x^2 - 2xy}{3y^2 - 3xy}$.

A. $\frac{2x^2}{3y^2}$

B. $\frac{x^2 - 1}{y^2 - 1}$

C. $\frac{2x}{3y}$

D. $-\frac{2x}{3y}$

2. Simplify $\frac{u}{u-v} + \frac{2v}{v-u}$.

A. $\frac{u+2v}{u-v}$

B. $\frac{u+2v}{v-u}$

C. $\frac{u-2v}{u-v}$

D. $\frac{u-2v}{v-u}$

3. If $4a - c = 3(3b - c)$, then $c =$

A. $\frac{9b-4a}{3}$

B. $\frac{9b}{2} - 4a$

C. $\frac{9b}{4} - a$

D. $\frac{9b}{2} - 2a$

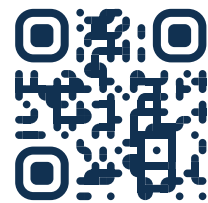
4. It is given that $\frac{1}{a} = \frac{7b-4}{5}$. Which of the following is correct?

A. $b = \frac{5a+4}{7}$

B. $b = \frac{4a+5}{7}$

C. $b = \frac{4a+7}{a}$

D. $b = \frac{4a+5}{7a}$



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