

REVISION TEST 1 (Page 18)

Basic arithmetic and fractions

This assignment covers the material contained in chapters 1 and 2.

1. Evaluate: $1009 \text{ cm} - 356 \text{ cm} - 742 \text{ cm} + 94 \text{ cm}$

	<u>Marks</u>
$1009 + 94 = 1103$	1
$356 + 742 = 1098$	1
$1009 \text{ cm} - 356 \text{ cm} - 742 \text{ cm} + 94 \text{ cm} = 1103 \text{ cm} - 1098 \text{ cm}$ $= 5 \text{ cm}$	1
Total:	3

2. Determine $\pounds 284 \times 9$

	<u>Marks</u>
$\begin{array}{r} 284 \\ \times 9 \\ \hline 2556 \\ 73 \end{array}$	2
Hence, $\pounds 284 \times 9 = \pounds 2556$	1
Total:	3

3. Evaluate: (a) $-11239 - (-4732) + 9639$ (b) -164×-12 (c) 367×-19

	<u>Marks</u>
(a) $-11239 - (-4732) + 9639 = -11239 + 4732 + 9639 = 3132$	2
(b) $-164 \times -12 = 164 \times 12 = 1968$	2
(c) $367 \times -19 = -6973$	2
Total:	6

4. Calculate: (a) $\$153 \div 9$ (b) $1397 \text{ g} \div 11$

	<u>Marks</u>
(a) $\$153 \div 9 = \17	2
(b) $1397 \text{ g} \div 11 = 127 \text{ g}$	2
Total:	4

5. A small component has a mass of 27 grams. Calculate the mass, in kilograms, of 750 such components.

	<u>Marks</u>
Mass of 750 components = $750 \times 27 \text{ g} = 20,250 \text{ g}$	2
$= 20.25 \text{ kg}$	1
Total:	3

6. Find (a) the highest common factor, and (b) the lowest common multiple of the following numbers: 15 40 75 120

	<u>Marks</u>
The factors of the given numbers are:	
$15 = 3 \times 5$	1
$40 = 2 \times 2 \times 2 \times 5$	1
$75 = 3 \times 5 \times 5$	1
$120 = 2 \times 2 \times 2 \times 3 \times 5$	1
(a) H.C.F. = 5	2
(b) L.C.M. = $2 \times 2 \times 2 \times 3 \times 5 \times 5 = 600$	7
Total:	

7. Evaluate: $7 + 20 \div (9 - 5)$

	<u>Marks</u>
$7 + 20 \div (9 - 5) = 7 + 20 \div 4$ (B)	1
$= 7 + 5$ (D)	1
$= 12$ (A)	1
Total:	3

8. Evaluate: $147 - 21(24 \div 3) + 31$

	<u>Marks</u>
$147 - 21(24 \div 3) + 31 = 147 - 21 \times 8 + 31$ (B)	1
$= 147 - 168 + 31$ (M)	1
$= 10$ (A/S)	1
Total:	3

9. Evaluate: $40 \div (1 + 4) + 7[8 + (3 \times 8) - 27]$

	<u>Marks</u>
$40 \div (1 + 4) + 7[8 + (3 \times 8) - 27] = 40 \div (1 + 4) + 7[8 + 24 - 27]$ (B)	1
$= 40 \div 5 + 7 \times 5$ (B)	1
$= 8 + 7 \times 5$ (D)	1
$= 8 + 35$ (M)	1
$= 43$ (A)	1
Total:	5

10. Evaluate: $\frac{(7-3)(2-5)}{3(9-5) \div (2-6)}$

	<u>Marks</u>
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$\frac{(7-3)(2-5)}{3(9-5) \div (2-6)} = \frac{4 \times -3}{3 \times 4 \div -4}$ $\frac{-12}{-3} = 4$	1
	2
	3
Total:	

11. Evaluate: $\frac{(7+4 \times 5) \div 3 + 6 \div 2}{2 \times 4 + (5-8) - 2^2 + 3}$

	Marks
$\frac{(7+4 \times 5) \div 3 + 6 \div 2}{2 \times 4 + (5-8) - 2^2 + 3} = \frac{27 \div 3 + 6 \div 2}{2 \times 4 + -3 - 2^2 + 3}$	2
$= \frac{9 + 6 \div 2}{2 \times 4 + -3 - 4 + 3} = \frac{9 + 3}{8 - 3 - 4 + 3}$	2
$= \frac{12}{4} = 3$	1
	5
Total:	

12. Evaluate: $\frac{(4^2 \times 5 - 8) \div 3 + 9 \times 8}{4 \times 3^2 - 20 \div 5}$

	Marks
$\frac{(4^2 \times 5 - 8) \div 3 + 9 \times 8}{4 \times 3^2 - 20 \div 5} = \frac{72 \div 3 + 9 \times 8}{4 \times 9 - 20 \div 5} = \frac{24 + 9 \times 8}{4 \times 9 - 4} = \frac{24 + 72}{36 - 4}$	3
$= \frac{96}{32} = 3$	2
	5
Total:	

13. Simplify: (a) $\frac{3}{4} - \frac{7}{15}$ (b) $1\frac{5}{8} - 2\frac{1}{3} + 3\frac{5}{6}$

	Marks
$(a) \frac{3}{4} - \frac{7}{15} = \frac{45 - 28}{60} = \frac{17}{60}$	2

$(b) \quad 1\frac{5}{8} - 2\frac{1}{3} + 3\frac{5}{6} = 1 + \frac{5}{8} - 2 - \frac{1}{3} + 3 + \frac{5}{6} = 2 + \frac{5}{8} - \frac{1}{3} + \frac{5}{6}$ $= 2 + \frac{15 - 8 + 20}{24}$ $= 2 + \frac{27}{24} = 2 + 1 + \frac{3}{24}$ $= 3\frac{1}{8}$ Total:	2 1 2 1 8
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14. A training college has 480 students of which 150 are girls. Express this as a fraction in its simplest form.

$\text{Fraction of girls} = \frac{150}{480} = \frac{15}{48} = \frac{5}{16}$ Total:	Marks 2 2
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15. A tank contains 18,000 litres of oil. Initially, $\frac{7}{10}$ of the contents are removed, then $\frac{2}{5}$ of the remainder is removed. How much oil is left in the tank?

$\text{Oil initially removed} = \frac{7}{10} \times 18000 = 12600 \text{ litres}$ $\text{Hence, oil remaining} = 18000 - 12600 = 5400 \text{ litres}$ $\text{Amount now removed} = \frac{2}{5} \times 5400 = 2160 \text{ litres}$ $\text{Hence, oil remaining} = 5400 - 2160 = \mathbf{3240 \text{ litres}}$ (or similar) Total:	Marks 2 2 4
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16. Evaluate: (a) $1\frac{7}{9} \times \frac{3}{8} \times 3\frac{3}{5}$ (b) $6\frac{2}{3} \div 1\frac{1}{3}$ (c) $1\frac{1}{3} \times 2\frac{1}{5} \div \frac{2}{5}$

	<u>Marks</u>
(a) $1\frac{7}{9} \times \frac{3}{8} \times 3\frac{3}{5} = \frac{16}{9} \times \frac{3}{8} \times \frac{18}{5} = \frac{2}{3} \times \frac{1}{1} \times \frac{18}{5} = \frac{2}{1} \times \frac{1}{1} \times \frac{6}{5} = \frac{12}{5} = 2\frac{2}{5}$	3
(b) $6\frac{2}{3} \div 1\frac{1}{3} = \frac{20}{3} \div \frac{4}{3} = \frac{20}{3} \times \frac{3}{4} = \frac{5}{1} \times \frac{1}{1} = 5$	3
(c) $1\frac{1}{3} \times 2\frac{1}{5} \div \frac{2}{5} = \frac{4}{3} \times \frac{11}{5} \div \frac{2}{5} = \frac{4}{3} \times \frac{11}{5} \times \frac{5}{2} = \frac{2}{3} \times \frac{11}{1} \times \frac{1}{1} = \frac{22}{3} = 7\frac{1}{3}$	4
Total:	10

17. Calculate: (a) $\frac{1}{4} \times \frac{2}{5} - \frac{1}{5} \div \frac{2}{3} + \frac{4}{15}$ (b) $\frac{\frac{2}{3} + 3\frac{1}{5} \times 2\frac{1}{2} + 1\frac{1}{3}}{8\frac{1}{3} \div 3\frac{1}{3}}$

	<u>Marks</u>
(a) $\frac{1}{4} \times \frac{2}{5} - \frac{1}{5} \div \frac{2}{3} + \frac{4}{15} = \frac{1}{4} \times \frac{2}{5} - \frac{1}{5} \times \frac{3}{2} + \frac{4}{15} = \frac{1}{10} - \frac{3}{10} + \frac{4}{15} = \frac{3-9+8}{30} = \frac{2}{30} = \frac{1}{15}$	4
(b) $\frac{\frac{2}{3} + 3\frac{1}{5} \times 2\frac{1}{2} + 1\frac{1}{3}}{8\frac{1}{3} \div 3\frac{1}{3}} = \frac{\frac{2}{3} + \frac{16}{5} \times \frac{5}{2} + \frac{4}{3}}{\frac{25}{3} \div \frac{10}{3}} = \frac{\frac{2}{3} + 8 + \frac{4}{3}}{\frac{25}{3} \times \frac{3}{10}} = \frac{\frac{10}{3}}{\frac{5}{2}} = 10 \times \frac{2}{5} = 4$	4
Total:	8

18. Simplify: $\left\{ \frac{1}{13} \text{ of } \left(2\frac{9}{10} - 1\frac{3}{5} \right) \right\} + \left(2\frac{1}{3} \div \frac{2}{3} \right) - \frac{3}{4}$

	<u>Marks</u>
$\left\{ \frac{1}{13} \text{ of } \left(2\frac{9}{10} - 1\frac{3}{5} \right) \right\} + \left(2\frac{1}{3} \div \frac{2}{3} \right) - \frac{3}{4} = \frac{1}{13} \times \left(\frac{29}{10} - \frac{8}{5} \right) + \left(\frac{7}{3} \times \frac{3}{2} \right) - \frac{3}{4}$	2
$= \frac{1}{13} \times \left(\frac{29-16}{10} \right) + \left(\frac{7}{2} \right) - \frac{3}{4}$	2
	1

$\frac{1}{13} \times \frac{13}{10} + \frac{7}{2} - \frac{3}{4}$ $= \frac{1}{10} + \frac{7}{2} - \frac{3}{4} = \frac{2+70-15}{20} = \frac{57}{20} = 2\frac{17}{20}$ Total:	3 8
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TOTAL MARKS FOR REVISION TEST 1: 90
