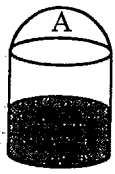


# Revision & Practice Worksheet 10

## A Number skills: Comparing parts of quantities

Skill 1.4

The following 12 L paint cans have an amount of paint left over after part of their contents have been used. Convert the amount left over to percentages and list the cans from fullest to emptiest:



9 L full



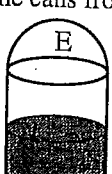
73% full



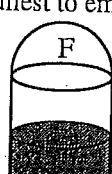
$\frac{7}{9}$  full



$\frac{1}{3}$  empty



2.5 L empty



28.5% empty

## B Number applications: Finding fractions of quantities

Skill 2.5

Find the fractions of these quantities:

- |                             |                             |                              |                            |
|-----------------------------|-----------------------------|------------------------------|----------------------------|
| 1 $\frac{2}{7}$ of \$84.77  | 2 $\frac{3}{16}$ of \$17.66 | 3 $\frac{4}{7}$ of 161 s     | 4 $\frac{2}{11}$ of 5511 t |
| 5 $\frac{5}{6}$ of 540.6 g  | 6 $\frac{5}{7}$ of \$57.54  | 7 $\frac{1}{5}$ of 2.5 t     | 8 $\frac{4}{7}$ of \$62.93 |
| 9 $\frac{1}{6}$ of 25.26 kg | 10 $\frac{3}{8}$ of \$1.68  | 11 $\frac{4}{11}$ of \$13.75 | 12 $\frac{5}{9}$ of 468 t  |

## C Number applications: Percentages increase or decrease

Skill 2.8

Find the scale factor which can be used to increase the value of an amount by 8.5%.

Use this factor to increase these bank account balances by 8.5%:

- |            |             |             |            |
|------------|-------------|-------------|------------|
| 1 \$18 000 | 2 \$52 000  | 3 \$250     | 4 \$982    |
| 5 \$10 000 | 6 \$15 200  | 7 \$81 200  | 8 \$59 000 |
| 9 \$62 000 | 10 \$53 200 | 11 \$39 000 | 12 \$5000  |
| 13 \$1800  | 14 \$2900   | 15 \$3750   |            |

## D Algebra: Constructing practical equations

Skill 3.13

Set up an equation for the following and solve the unknown:

- The first number is 6 less than the second. If their sum is 180 find both numbers.
- A rectangular lawn has its length 2 m longer than its width. If the lawn area is 35 m<sup>2</sup> find the dimensions of the lawn.

## E Indices: Working with fractional powers

Skill 4.7

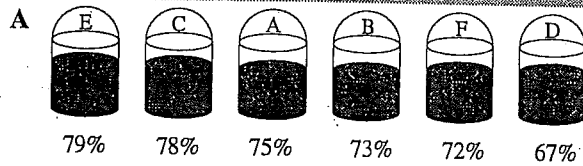
1 Evaluate:

- |                              |                                                 |                                        |                                             |
|------------------------------|-------------------------------------------------|----------------------------------------|---------------------------------------------|
| (a) $49^{\frac{1}{2}}$       | (b) $1^{\frac{1}{2}} - 1$                       | (c) $25^{\frac{1}{2}} + 5$             | (d) $8^{\frac{1}{3}}$                       |
| (e) $(-8)^{\frac{1}{3}} + 2$ | (f) $2(-27)^{\frac{1}{3}}$                      | (g) $(16 \times 25)^{\frac{1}{2}} + 8$ | (h) $169^{\frac{1}{2}} + 196^{\frac{1}{2}}$ |
| (i) $125^{\frac{1}{3}} - 8$  | (j) $\frac{216^{\frac{1}{3}}}{8^{\frac{1}{3}}}$ |                                        |                                             |

2 Simplify:

- |                                                           |                                                       |                                                         |                                                             |
|-----------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------|
| (a) $\left(\frac{49a^4b^6}{c^8}\right)^{\frac{1}{2}}$     | (b) $\left(\frac{27a^6b^3}{c^9}\right)^{\frac{1}{3}}$ | (c) $\left(\frac{25a^6b^8}{49c^4}\right)^{\frac{1}{2}}$ | (d) $\left(-\frac{1000a^6b^3}{c^{12}}\right)^{\frac{1}{3}}$ |
| (e) $\left(-\frac{64a^6b^3}{c^{15}}\right)^{\frac{1}{3}}$ |                                                       |                                                         |                                                             |

## Worksheet 10



- B**
- |           |           |           |
|-----------|-----------|-----------|
| 1 \$24.22 | 2 \$3.31  | 3 92 s    |
| 4 1002 t  | 5 450.5 g | 6 \$41.10 |
| 7 0.5 t   | 8 \$35.96 | 9 4.21 kg |
| 10 63¢    | 11 \$5    | 12 260 t  |

- C** Factor = 1.085
- |             |              |              |
|-------------|--------------|--------------|
| 1 \$19 530  | 2 \$56 420   | 3 \$271.25   |
| 4 \$1065.47 | 5 \$10 850   | 6 \$16 492   |
| 7 \$88 102  | 8 \$64 015   | 9 \$67 270   |
| 10 \$57 722 | 11 \$42 315  | 12 \$5425    |
| 13 \$1953   | 14 \$3146.50 | 15 \$4068.75 |

- D** 1 Let second number =  $n$   
 $6 + n = 180$   
 $n = 93$

Number = 87, 93

- 2 Let the width =  $x$   
 $x^2 + 2x = 35$   
 $(x - 5)(x + 7) = 0$   
 $x = 5$

Width is 5 m, length is 7 m.

- E** 1 (a) 7 (b) 0 (c) 10 (d) 2  
 (e) 0 (f) -6 (g) 28 (h) 27  
 (i) -3 (j)  $1\frac{1}{2}$

- 2 (a)  $\frac{7a^2b^3}{c^4}$  (b)  $\frac{3a^2b}{c^3}$  (c)  $\frac{5a^3b^4}{7c^2}$   
 (d)  $-\frac{10a^2b}{c^4}$  (e)  $-\frac{4a^2b}{c^5}$