

Practical Maths for Electrical Installation Students & Apprentices

Homework Pack – Lecturer Answers (Units 1–10)

Unit 1 – Basic Operations (Answers)

Section A – Core Skills

1. 45

2. 44

3. 72

4. 9

5. 60

Section B – Application

1. 700 W

2. 55 m

3. 8 W

4. 77

5. 37

Section C – Challenge

1. 140

2. 12

3. 76

Unit 2 – Fractions (Answers)

Section A – Core Skills

1. $\frac{5}{6}$

2. $\frac{3}{8}$

3. $\frac{2}{5}$

4. $\frac{1}{3}$

5. $\frac{3}{4}$

Section B – Application

1. $\frac{7}{8}$ m

2. $\frac{3}{5}$

3. $\frac{4}{3}$

4. $\frac{1}{6}$

5. 0.75

Section C – Challenge

1. $\frac{1}{2}$

2. $\frac{1}{2}$

3. 2

Unit 3 – Decimals (Answers)

Section A – Core Skills

1. 1.25

2. 1.3

3. 6.4

4. 4

5. 7.36

Section B – Application

1. 2.0 A

2. 3.6

3. 8.8

4. 3.2

5. 0.75

Section C – Challenge

1. 4.10

2. 8.4

3. 12

Unit 4 – Percentages (Answers)

Section A – Core Skills

1. 27

2. 30

3. 28

4. 9

5. 36

Section B – Application

1. £180

2. 60 W

3. 90 A

4. 170 V

5. 6

Section C – Challenge

1. 25%

2. 15%

3. 140

Unit 5 – Ratios (Answers)

Section A – Core Skills

1. 2:3

2. 2:5

3. 5:1

4. 2:3

5. 2:3

Section B – Application

1. 24 and 24

2. 40 and 20

3. £54 and £36

4. 45 and 27

5. 50 and 100

Section C – Challenge

1. 6 and 30

2. 40 and 60

3. 24 and 32

Unit 6 – Powers (Indices) (Answers)

Section A – Core Skills

1. 27

2. 36

3. 64

4. 81

5. 125

Section B – Application

1. 32

2. 49

3. 100

4. 64

5. 121

Section C – Challenge

1. 32

2. 9

3. 256

Unit 7 – SI Units (Answers)

Section A – Core Skills

1. 3000 W
2. 2.5 km
3. 0.75 kg
4. 1500 mm
5. 2000 mA

Section B – Application

1. 800 V
2. 0.5 kW
3. 120 mm
4. 1200 g
5. 0.05 m

Section C – Challenge

1. 2,500,000 W
2. 6 m
3. 4 g

Unit 8 – Algebra (Answers)

Section A – Core Skills

1. $x=8$
2. $x=6$
3. $x=13$
4. $x=7$
5. $x=15$

Section B – Application

1. $x=13$
2. $x=4$
3. $x=10$
4. $x=24$
5. $x=4$

Section C – Challenge

1. $x=5$
2. $x=5$
3. $x=7$

Unit 9 – Transposition of Formulae (Answers)

Section A – Core Skills

1. $I=P/V$

2. $m=F/a$

3. $h=A/b$

4. $m=(y-c)/x$

5. $t=Q/I$

Section B – Application

1. $v=d/t$

2. $R=V/I$

3. $I=\sqrt{(P/R)}$

4. $m=E/c^2$

5. $c=y-mx$

Section C – Challenge

1. $V=P/I$

2. $t=d/v$

3. $V=IR$

Unit 10 – Trigonometry & Pythagoras (Answers)

Section A – Core Skills

1. 13

2. 17

3. 0.707 (approx)

4. 0.866 (approx)

5. 1.732 (approx)

Section B – Application

1. 6

2. 5

3. 15

4. 45°

5. 25

Section C – Challenge

1. $\approx 53^\circ$

2. 60°

3. 60°