



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Direct & Inverse Proportion · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☒ Secure

☐ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Direct & Inverse Proportion

Total marks available: 75

● Direct & Inverse Proportion

✓ £6.00

Q1 · ● Developing · 2 marks

METHOD

Cost of 1 = $\pounds 4.00 \div 4 = \pounds 1.00$

Cost of 6 = $\pounds 1.00 \times 6 = \pounds 6.00$

✓ 42 litres

Q2 · ● Developing · 2 marks

METHOD

For 1 minute: $21 \div 3 = 7$ litres

For 6 minutes: $7 \text{ litres} \times 6 = 42 \text{ litres}$

✓ £3.40

Q3 · ● Developing · 2 marks

METHOD

Cost of 1 = $\pounds 1.70 \div 2 = \pounds 0.85$

Cost of 4 = $\pounds 0.85 \times 4 = \pounds 3.40$

✓ 50 litres

Q4 · ● Developing · 2 marks

METHOD

For 1 minute: $30 \div 6 = 5$ litres

For 10 minutes: $5 \text{ litres} \times 10 = 50 \text{ litres}$

✓ £94.50

Q5 · ● Developing · 2 marks

METHOD

Cost of 1 = $\pounds 42.00 \div 4 = \pounds 10.50$

Cost of 9 = $\pounds 10.50 \times 9 = \pounds 94.50$

✓£22

Q6 · ● Developing · 2 marks

METHOD

For 1 hour: $33 \div 3 = £11$

For 2 hours: $£11 \times 2 = £22$

✓72 litres

Q7 · ● Developing · 2 marks

METHOD

For 1 minute: $80 \div 10 = 8$ litres

For 9 minutes: $8 \text{ litres} \times 9 = 72 \text{ litres}$

✓50 pages

Q8 · ● Developing · 2 marks

METHOD

For 1 minute: $100 \div 10 = 10$ pages

For 5 minutes: $10 \text{ pages} \times 5 = 50 \text{ pages}$

✓£23.00

Q9 · ● Developing · 2 marks

METHOD

Cost of 1 = $£46.00 \div 4 = £11.50$

Cost of 2 = $£11.50 \times 2 = £23.00$

✓£6.30

Q10 · ● Developing · 2 marks

METHOD

Cost of 1 = $£2.10 \div 2 = £1.05$

Cost of 6 = $£1.05 \times 6 = £6.30$

✓ 8 days

Q11 · ● Secure · 3 marks

METHOD

For 1 dog it would last $6 \times 4 = 24$ days

For 3 dogs: $24 \div 3 = 8$ days

✓ 9 days

Q12 · ● Secure · 3 marks

METHOD

For 1 dog it would last $3 \times 6 = 18$ days

For 2 dogs: $18 \div 2 = 9$ days

✓ 80 g

Q13 · ● Secure · 2 marks

METHOD

For 1 person: $200 \text{ g} \div 5 = 40 \text{ g}$

For 2 people: $40 \text{ g} \times 2 = 80 \text{ g}$

✓ £30

Q14 · ● Secure · 3 marks

METHOD

Total prize = $3 \times £60 = £180$

$£180 \div 6 = £30$

✓ 240 g

Q15 · ● Secure · 2 marks

METHOD

For 1 person: $80 \text{ g} \div 4 = 20 \text{ g}$

For 12 people: $20 \text{ g} \times 12 = 240 \text{ g}$

✓60 g

Q16 · ● Secure · 2 marks

METHOD

For 1 person: $120 \text{ g} \div 6 = 20 \text{ g}$

For 3 people: $20 \text{ g} \times 3 = 60 \text{ g}$

✓40 minutes

Q17 · ● Secure · 3 marks

METHOD

1 tap would take $4 \times 20 = 80$ minutes

2 taps: $80 \div 2 = 40$ minutes

✓150 g

Q18 · ● Secure · 2 marks

METHOD

For 1 person: $90 \text{ g} \div 6 = 15 \text{ g}$

For 10 people: $15 \text{ g} \times 10 = 150 \text{ g}$

✓900 g

Q19 · ● Secure · 2 marks

METHOD

For 1 person: $360 \text{ g} \div 6 = 60 \text{ g}$

For 15 people: $60 \text{ g} \times 15 = 900 \text{ g}$

✓8 days

Q20 · ● Secure · 3 marks

METHOD

For 1 dog it would last $2 \times 20 = 40$ days

For 5 dogs: $40 \div 5 = 8$ days

✓ 3 days

Q21 · ● Greater Depth · 3 marks

METHOD

1 worker would take $3 \times 6 = 18$ days

6 workers: $18 \div 6 = 3$ days

✓ 8 days

Q22 · ● Greater Depth · 3 marks

METHOD

1 worker would take $8 \times 4 = 32$ days

4 workers: $32 \div 4 = 8$ days

✓ Pack A (79p each)

Q23 · ● Greater Depth · 3 marks

METHOD

Pack A: $\pounds 6.32 \div 8 = 79\text{p}$ each

Pack B: $\pounds 3.28 \div 4 = 82\text{p}$ each

Pack A is cheaper per item, so Pack A is better value.

✓ Pack A (51p each)

Q24 · ● Greater Depth · 3 marks

METHOD

Pack A: $\pounds 3.06 \div 6 = 51\text{p}$ each

Pack B: $\pounds 4.40 \div 8 = 55\text{p}$ each

Pack A is cheaper per item, so Pack A is better value.

✓ Pack B (73p each)

Q25 · ● Greater Depth · 3 marks

METHOD

Pack A: $\pounds 4.56 \div 6 = 76\text{p}$ each

Pack B: $\pounds 5.84 \div 8 = 73\text{p}$ each

Pack B is cheaper per item, so Pack B is better value.

✓ 9 days

Q26 · ● Greater Depth · 3 marks

METHOD

1 worker would take $6 \times 6 = 36$ days

4 workers: $36 \div 4 = 9$ days

✓ 8 days

Q27 · ● Greater Depth · 3 marks

METHOD

1 worker would take $2 \times 28 = 56$ days

7 workers: $56 \div 7 = 8$ days

✓ Pack B (42p each)

Q28 · ● Greater Depth · 3 marks

METHOD

Pack A: $\pounds 1.80 \div 4 = 45\text{p}$ each

Pack B: $\pounds 6.30 \div 15 = 42\text{p}$ each

Pack B is cheaper per item, so Pack B is better value.

✓ Pack A (68p each)

Q29 · ● Greater Depth · 3 marks

METHOD

Pack A: $\pounds 16.32 \div 24 = 68\text{p}$ each

Pack B: $\pounds 14.40 \div 20 = 72\text{p}$ each

Pack A is cheaper per item, so Pack A is better value.

✓ 12 days

Q30 · ● Greater Depth · 3 marks

METHOD

1 worker would take $4 \times 21 = 84$ days

7 workers: $84 \div 7 = 12$ days