

# Extended answers for Maths (ages 10–11)

## Properties of numbers (pp.6–7)

1	3217 + seven 100s gives 3917.
2	Reading the number gives 'nine million, seven hundred and forty-two thousand, six hundred and eighty-three'. The answer is 7 hundred thousand.
3	D. Looking at the thousands, we have 32, 24, 29, 31, 34. Arranging these in order gives 24, 29, 31, 32, 34. So, the mid number must be thirty-one thousand, four hundred and twenty-six (31,426).
4	2. 729,977 rounds down to 700,000, and 492,916 rounds up to 500,000. The difference is $7 - 5 = 2$ (hundred thousand).
5	Numbers divisible by 3 between 20 and 30 are 21, 24 and 27. Only 24 is an even number.
6	$-4 + 7 = +3$ , then $+3 - 5 = -2^{\circ}\text{C}$
7	There are four quarter-hour intervals in one hour, so there will be eight in two hours. Counting in steps of 1000 (or multiplying 1000 by 8) gives 8000. The answer is $8000 + 23,000 = 31,000$ supporters.
8	The rule for the sequence is double the number and add one. So, after 5, 11, 23, 47, we have $47 \times 2 + 1 = 95$ .
9	The temperature starts at $5^{\circ}\text{C}$ , then counts down in increments of $2^{\circ}\text{C}$ for 6 hours, which is $-12^{\circ}\text{C}$ . $5 - 12 = -7^{\circ}\text{C}$ .
10	The numbers that divide into 40 are 1, 2, 4, 5, 8, 10, 20 and 40. Only 5 is odd and prime.
11	A. Writing out the number, we get 7,475,382. Exactly 100,000 less than this is 7,375,382.

## Addition and subtraction (pp.8–9)

1	$46,325 + 53,675 = 100,000$ . So, $100,000 - 53,675 = 46,325$ . Therefore, $200,000 - 53,675 = 146,325$ .
2	$5600 + 7300 + 4300 = 17,200 - 200 - 200 - 200 = 16,600$
3	C. For the first calculation, rearranging gives the missing number. $624 - 390 = 234$ . Checking with the second calculation gives $234 + 176 = 410$ . The answer is 234.
4	$20p + 15p + 30p + 25p = 90p$ , so she receives 10p change.
5	$243 - 165 = 78$ can be rearranged to give $165 + 78 = 243$ . So $165,000 + 78,000 = 243,000$ .
6	$258 + 305 + 482 = 1045$ . So, $1378 - 1045 = 333$ .
7	$\pounds 143,000 - \pounds 121,500 = \pounds 21,500$ . $\pounds 21,500 - \pounds 3725 = \pounds 17,725$

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8	Rounding each number first gives $600,000 + 500,000 + 300,000 = 1,400,000$ . (In this case, adding all three numbers together gives 1,368,062, which also rounds to 1,400,000.)
9	Separate the numbers, starting with the largest two. $5400 - 2200 = 3200$ Add the remaining numbers. $820 + 170 + 52 = 1042$ . So, $3200 - 1042 = 2158\text{kg}$ .
10	Women and girls = $12,382 + 5130 = 17,512$ Men and boys = $11,416 + 3950 = 15,366$ (Add 4000 then subtract 50.) $17,512 - 15,366 = 2146$
11	E. Lotte World Tower = 1891, plus 182 = 2073 feet, the height of the Shanghai Tower.

### Multiplication and division (pp.10–11)

1	15 pages for 5 nights = $5 \times 15 = 75$ 20 pages for 3 nights = $3 \times 20 = 60$ So, $75 + 60 = 135$ pages.
2	D. The first calculation is $17 \times 24 = 408$ . 34 is double 17, and 48 is double 24, so the answer to $34 \times 48$ must be $4 \times 408 = 1632$ ( $2 \times 17 \times 2 \times 24$ is the same as $4 \times 17 \times 24$ , or $4 \times 408$ .)
3	To divide 100 by 30, count in multiples of 30: $30 + 30 + 30 = 90$ . So, $100 \div 30 = 3$ with 10 left over. For equal shares, the children receive 3 shares each.
4	There are five children, so one adult will go free. The total cost will be $5 \times \text{£}9$ for the children's tickets, and $1 \times \text{£}16$ for the adult ticket. $\text{£}45 + \text{£}16 = \text{£}61$
5	From 180 sheets, 12 children receiving 12 sheets each is 144 sheets. $180 - 144 = 36$ . Finally, $36 \div 2 = 18$ sheets per pile.
6	Starting at 2 and using elimination, we get to $42 = 16$ and $43 = 64$ . $64 - 16 = 48$
7	$420 \div 15 = 28$ . Either do long division or break it down as: $300 \div 15 = 20$ (as $30 \div 15 = 2$ ) and $120 \div 15 = 8$ (counting on). $20 + 8 = 28$
8	The possible numbers are 5, 10, 15, 20 and 25. $5 \times 25 = 125$ , $10 \times 25 = 250$ , $20 \times 25 = 500$ , so $15 \times 25 = 375$ The smaller number is 15.
9	The easiest solution is to multiply 600 by one-third, which is 200, then calculate $200 \times \text{£}25 = \text{£}5000$ . The longer process ( $600 \times 25 \div 3$ ) will, of course, give the same answer.
10	The shop makes $\text{£}500$ at $\text{£}10$ per 2-metre length of fabric, so they must have sold 50 pieces. Each piece is 2m long, so the original roll was $2 \times 50 = 100\text{m}$ .
11	D. 1 megabyte = 1000 kilobytes. 1 gigabyte = $1000 \times 1000$ kilobytes = 1,000,000kb 64 gigabytes = 64 000 000kb

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## Time (pp.12–13)

1	The chicken weighs 2.5 kilograms, therefore it take $30 \times 2.5$ minutes (75 minutes) + 20 minutes (95 minutes). 95 minutes is equal to 1 hour and 35 minutes. 11:45 plus 1 hour and 35 minutes is 13:20.
2	14 months prior to 1st May is 1st March.
3	B. Three-quarters of an hour = 45 minutes. $45 - 7 = 38$ minutes
4	Kieran attends diving lessons for three 50-minute sessions per week. $3 \times 50$ minutes = 150 minutes, which is 2 hours and 30 minutes.
5	$14:03 + 17$ minutes = 14:20
6	$08:40$ to $17:15 = 8$ hours and 35 minutes. Break times add up to 65 minutes. 8 hours and 35 minutes – 65 minutes = 7 hours and 30 minutes.
7	Time elapsed between $08:08$ and $15:40 = 52$ minutes + 6 hours + 40 minutes = 7 hours 32 minutes.
8	The $06:45$ train takes 3 hours and 45 minutes. The $07:12$ train takes 4 hours and 18 minutes. The $08:35$ train takes 4 hours and 13 minutes. Therefore, the slowest journey takes 4 hours and 18 minutes.
9	Counting on seven days from Thursday 11th February is 18th February. Counting on a further seven days is 25th February. In a leap year, February has 29 days. The next Thursday will be 3rd March, which is the first Thursday in March. The third Thursday would therefore be 14 days after this date – 17th March.
10	The coffee shop will be open for 7 hours and 30 minutes each weekday and 9 hours and 30 minutes on Saturdays and Sundays. There are 10 weekdays in a fortnight, so $7.5$ hours $\times 10 = 75$ hours. There are 2 Saturdays and 2 Sundays in a fortnight, so $9.5 \times 4 = 38$ hours. Total hours open is $75 + 38 = 113$ hours.
11	$A 25$ minutes $\times 5$ weekdays = 125 minutes. 125 minutes = 2 hours and 5 minutes

## Money 1 (pp.14–15)

1	Sam must give one £2 coin, one 50p coin, two 20p coins, one 5p coin and two 2p coins. The total is 7 coins.
2	Florrie will have $\pounds 10.00 - \pounds 2.00 (\pounds 8.00)$ to spend on balloons. $\pounds 8.00 \div 25 = 32$ packs.
3	E. $55\text{p} + 45\text{p} = \pounds 1.00$ . $45 \times \pounds 1.00 = \pounds 45.00$
4	First, add the cost of the items ( $\pounds 1.49 + \pounds 2.10 + \pounds 2.99 + \pounds 2.10 + \pounds 3.75 + \pounds 4.20 + \pounds 1.85 = \pounds 18.48$ ). $\pounds 20.00 - \pounds 18.48 = \pounds 1.52$

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5	Deduct £48.00 from £312.00 (£264.00), then divide this sum by 2 (£132.00) and that will be the smaller of the two amounts. Adding on £48.00 to £132.00 gives the larger amount, £180.00.
6	$1p + 2p + 5p + 10p = 18p$ . $£1.26 \div 18 = 7$ . Therefore, there are seven of each type of coin and four different coins. $7 \times 4 = 28$ coins
7	The total bill will equal $4 \times £300 + (£10.25 \times 8) + (£6.25 \times 8)$ . $£300 + £82 + £50 = £1332.00$
8	The normal price for membership will be $£30 \times 12$ months (£360). The discount will be 30% of £360 (£108). $£360 - £108 = £252.00$
9	Each child will be given $£12 \div 3$ for the household chores (£4.00). Adele earns an extra £5.00 for mowing the lawn. $£4.00 + £5.00 = £9.00$
10	B. $£2.99 \times 2$ (£5.98) + 99p + £1.49 = £8.46. $£10.00 - £8.46 = £1.54$

### Money 2 (pp16–17)

1	$90.00 \times 75p = £67.50$
2	$380,000 \div 1.9 = £200,000.00$
3	B. $90.00 \times 60p = £54.00$ . $£90.00 - £54.00 = £36.00$
4	$300 \times 20 = 6000$ Egyptian pounds
5	Total price of tickets in Euros is $40.00 + 40.00 + 15.00 + 15.00 = 110$ . $110 \times 80p = £88.00$
6	$70 \times 60p = £42.00$
7	$52,540 \div 100 = £525.40$
8	$500 \times 150 = \text{¥}75,000$
9	Total spend in lira = $2400 + 3600$ (6000) $6000 \times 12p = £720.00$
10	A. $260 \div 1.30 = £200.00$

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## Fractions (pp.18–19)

1	One-third of 12,711 = $12,711 \div 3 = 4237$ . Two-thirds = $(4237 \times 2) = 8474$ spectators
2	One-quarter of 32 ( $32 \div 4$ ) is 8, therefore there are 8 girls and $(32 - 8)$ boys – 24 boys. Half of 24 = 12. $12 + 8 = 20$ children
3	D. Kim has £20. Grace has $(£20 - £4)$ £16. $£20 + £16 = £36$ , which equals half the total. Therefore, the other half of the total must equal £36.00.
4	If half the children are 7 years old, that will be $100 \div 2$ (50). A quarter of the children will equal $100 \div 4$ (25). $50 + 25 = 75$ . $100 - 75 = 25$ children
5	If two-fifths of the balloons are still on the ground, three-fifths must be in the air. $\frac{1}{5}$ of 90 = $90 \div 5$ (18). Three-fifths equals $18 \times 3$ which is 54 balloons.
6	Neil ate $60 \times \frac{1}{3}$ (20 chocolates) on Sunday, leaving 40 chocolates remaining. Neil's brother ate $40 \times \frac{1}{5}$ (8 chocolates), leaving 32 chocolates remaining. Neil's sister ate $32 \times \frac{1}{2}$ (16 chocolates), leaving 16 chocolates remaining.
7	The mass of the car when it is unoccupied must equal $\frac{3}{5}$ of 1360. $1360 \times \frac{3}{5} = 816\text{kg}$
8	$£36 \times \frac{1}{2} = £18$ . $£36 \times \frac{1}{3} = £12$ . $£18 + £12 = £30$ . $£36 - £30 = £6.00$
9	Julian needs $\frac{3}{8}$ of 72 litres to fill his tank. $72 \times \frac{3}{8} = 27$ litres
10	$\frac{1}{6}$ of 36 = 6. $\frac{1}{9}$ of 36 = 4. $6 + 4 = 10$ . $36 - 10 = 26$ eggs
11	$240 \times \frac{1}{3} = 80$ . $240 - 80 = 160$ . $160 \times \frac{1}{4} = 40$ . $160 - 40 = 120$ . $120 \times \frac{2}{3} = 80$ . $120 - 80 = 40$ cakes
12	A. $168 \times \frac{7}{12} = 98$ . $168 \times \frac{1}{4} = 42$ . $98 + 42 = 140$ . $168 - 140 = 28$

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## Decimals (pp.20–21)

1	The correct answer is 0.68 but the cross is on 0.72. Counting forwards or backwards gives four hundredths, or 0.04.
2	$7.5 + 2.7 = 10.2\text{cm}$ . $45 - 10.2 = 34.8\text{cm}$
3	D. $1.273 - 0.398 = 0.875$ . This is the inverse of $0.875 + 0.398 = 1.273$ . ( $1.273 - 0.875 = 0.398$ is also the inverse, but this is not given in the list of options.)
4	To work out $200 \times 0.15$ , first multiply by 100, then double the answer. $100 \times 0.15 = 15\text{m}$ . $15 \times 2 = 30\text{m}$
5	The combined length of the three sticks is 11 inches. To work out $11 \times 2.54$ , break it down as follows. $10 \times 2.54 = 25.4$ . $11 \times 2.54 = 25.4 + 2.54 = 27.94\text{cm}$
6	$7.6 - 3.95 = 3.65\text{g}$ Counting back, 7.6 to 4 = 3.6, then 4 to 3.95 = 0.05, so $3.6 + 0.05 = 3.65$ .
7	$735 \div 1000 = 0.735\text{kg}$ because the decimal place moves three places to the left.
8	Each grain of rice weighs 0.025g. Multiplying this by 1000 = 25g. There are 1000 grains per person $\times 4 = 4000$ grains of rice in total for the family.
9	1 barrel holds 8 pints, so 5 barrels hold 40 pints. To work out $40 \times 0.57$ , multiply by 10 and then by 4. $10 \times 0.57 = 5.7$ . $5.7 \times 4 = 22.8$ litres
10	B. 1 laptop weighs 2.5kg, so 100 laptops weigh 250kg. $2 \times 250 = 500\text{kg}$ .

## Percentages (pp.22–23)

1	$800 \times 45\% = 360$ boys. Girls will be $800 - 360 = 440$ girls
2	If £15,000 is half of the required deposit, the deposit must equal £30,000 ( $\pounds 15,000 \times 2 = \pounds 30,000$ ) If £30,000 is 10% of the price of the apartment, then the apartment must cost $\pounds 30,000 \times 10 = \pounds 300,000.00$ .
3	E. 20% of 40 = 8, so 8 marbles are green. 60% of 40 = 24, so 24 marbles are blue. $24 + 8 = 32$ . Therefore, $40 - 32 = 8$ .
4	The best method is to calculate 5% of 40 (2). Florrie got 2 questions wrong.
5	The cost reduction is $\pounds 90.00 - \pounds 76.50$ (£13.50). 10% of £90 = £9.00, therefore 5% = £4.50. $\pounds 9.00 + \pounds 4.50 = \pounds 13.50$ . So the answer is 15%.
6	10% of £15 = £1.50. Therefore, 40% = $\pounds 1.50 \times 4$ (£6). $\pounds 15 + \pounds 6 = \pounds 21.00$

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7	The total cost of books is £45. William's profit is £54 – £45 (£9) £9.00 ÷ £45 equals $\frac{1}{5}$ as a fraction, which is equal to 20%.
8	10% of 360 miles = 36 miles. 5% of 360 miles = 18 miles. Therefore, the family must have travelled 36 + 18 miles (54 miles). 360 miles – 54 miles = 306 miles
9	10% of 250 = 25, so 20% = 25 × 2 (50). If 50 children have school lunches, then the students taking a packed lunch must be 250 – 50 = 200 students.
10	If Ejaz pays 80% of his bonus into his bank account, he must give 20% of the money to his children. If 20% is £640, 10% must be £320. 100% must be £320 × 10 = £3200.00
11	B. 1% of 1500 = 15. Therefore 7% must be 15 × 7 = 105.

### Ratio (pp.24–25)

1	$180^\circ \text{ degrees} \div 9 = 20^\circ$ . Therefore, two of the angles will each measure $80^\circ$ and the third, smallest, angle will measure $20^\circ$ .
2	Olive has 45 sweets left after keeping 5 for herself. One-third of 45 = 15, therefore she will have 45 – 15 (30) left after giving sweets to her sister Flo. 30 divided in the ratio 6:4 equals 18:12, therefore Sophie will receive 12 sweets.
3	C. The number of sheep to cows is given as 40:24. In its simplest form, this would be 5:3 as the largest factor of both 40 and 24 is 8.
4	As the track is 400 metres, the slower athlete will be lapped when the distance between the two runners reaches 400 metres. The faster runner will cover 300 metres while the slower runner covers 200 metres, then 600 metres and 400 metres, then 900 metres and 600 metres, then 1200 metres and 800 metres. At this point, there is 400 metres between the two runners and the slower athlete will have been lapped. The answer is 800 metres.
5	If the cheapest jeans are 1 unit of the ratio and cost £15, the jeans costing 3 units of the ratio must be $£15 \times 3 = £45.00$ .
6	D. There are four sides in a square and there are six faces on a cube, therefore the ratio is 4:6, which is simplified to 2:3.
7	A ratio of 3:5 is equal to 9:15. This means that Kieran will have nine 20p coins (£1.80) and £15.00 in his pocket. $£15.00 + £1.80 = £16.80$ .
8	$6 + 5 = 11$ . $66 \div 11 = 6$ . Multiply 5 by 6 to find the number of boys (30 boys).
9	If Kiana uses 100g of sugar, she will need 25% more flour, which is 125g.

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10	To calculate the number of fiction books, divide 2265 by 5 (2 + 3) which equals 453. Then multiply by 2 (906). To calculate the number of non-fiction books, multiply 453 by 3 (1359). The number of non-fiction books left by the end of the week must be $1359 - 353 = 1006$ books.
11	B. Divide 32 by 4 (3 + 1), which equals 8. Therefore, the number of girls in the class is 8.

### Proportion (pp.26–27)

1	Divide £48.60 by 6 to determine the cost of one portion (£8.10) and multiply the answer by 3 to calculate the cost of two portions. $£8.10 \times 2 = £16.20$
2	This is the same as saying that the florist sells two-thirds as many roses as daffodils. $\frac{2}{3}$ of 42 = 28 bunches
3	A. If there are five laptops to every computer and there are four computers, there must be $5 \times 4$ laptops (20). The total number of laptops and computers must equal $20 + 4$ (24).
4	The recipe is for 12 vanilla cupcakes. To make six cupcakes, you need to halve the quantity of the ingredients. $110\text{g} \div 2 = 55\text{g}$
5	$15 \div 5 = 3$ . Therefore, there are $2 \times 3 = 6$ girls.
6	This is the same as saying $\frac{3}{7}$ of the cars manufactured are white. One-seventh of 350 is 50, so three-sevenths is $50 \times 3 = 150$ vehicles.
7	This is the same as saying $\frac{1}{6}$ of the racehorses are grey. $\frac{1}{6}$ of 24 = 4 racehorses
8	Clara needs to increase the amounts of each ingredient by 50%. 50% of 2 = 1. Therefore, Clara will need $2 + 1 = 3$ eggs.
9	$225\text{km} \div 50\text{km} = 4.5\text{km}$ $8 \times 4.5 = 36$ litres
10	The proportions of paint are 1:4. The painter would need 2 litres of 'Midnight Blue'.
11	300g of smoked haddock will serve four people, therefore Daniel has to increase the amounts of all the ingredients by 50%. 50% of 300g = 150g, therefore the amount needed to serve six people would be $300\text{g} + 150\text{g} = 450\text{g}$ .
12	B. Lucy can read 20 pages of her book in 10 times as much time as she can read two pages. The answer must be 5 minutes and 12 seconds $\times 10$ . 5 minutes $\times 10 = 50$ minutes. 12 seconds $\times 10 = 120$ seconds (2 minutes). The answer must be 50 minutes + 2 minutes = 52 minutes.



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## Probability (pp.28–29)

1	He can roll 1, 2, 3 or 4, but not 5 or 6. There are 4 out of 6 possibilities, which simplifies to 2 in 3.
2	An even chance would be 1:1 (or 24:24), so there would need to be 13 more yellow marbles to make an even chance.
3	B. The probability is 4 in 52, which, when simplified, is 1 in 13.
4	There are 16 cars altogether ( $2 + 3 + 7 + 4$ ); $3 \text{ blue} + 7 \text{ black} = 10 \text{ cars}$ . The probability of a blue or black car is 10 in 16, which simplifies to 5 in 8.
5	A 1 in 5 chance of picking blue from 15 counters means that in every 5 counters, 1 is blue, so there must be 3 blue counters. So, 12 counters are not blue.
6	If there are 7 caramels in the bag, and 1 in 5 of the chocolates are caramel, then there must be $5 \times 7 = 35$ chocolates altogether.
7	There are 8 white handkerchiefs with a 4 in 7 chance of pulling white from the drawer. There must be 14 handkerchiefs in the drawer ( $4 \text{ in } 7 \text{ is } 8 \text{ in } 14 \text{ simplified}$ ). $8 \text{ white} + 3 \text{ blue} + 1 \text{ black} = 12$ handkerchiefs, so there must be 2 red handkerchiefs.
8	5 out of 50 cakes have only two cherries on top. This is a probability of 1 in 10. 9 in 10 have three cherries on top, which is the probability for the first customer of the day to have a cake with three cherries.
9	1 in 4 beads are blue. The probability of not picking a blue bead must be 3 in 4.
10	There are $20 + 15 + 17 = 52$ blocks altogether. 20 in 52 simplifies to 10 in 26, which simplifies to 5 in 13.
11	There are 24 children in the class and the probability of choosing a girl is 7 in 12. This means that for every 12 children, 7 are girls, so there must be 14 girls in the class as $24 - 14 = 10$ boys.

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## Area and perimeter (pp.30–31)

1	16 tiles would be needed to tile the length of the floor. 8 tiles would be needed to tile the width of the floor. $16 \times 8 = 128$ tiles
2	Separate the compound shape into two smaller shapes. One of the shapes will have area of $4\text{mm} \times 6\text{mm}$ ( $24\text{mm}^2$ ) and the other shape will have an area of $4\text{mm} \times 3\text{mm}$ ( $12\text{mm}^2$ ). Add the areas of the two shapes together to arrive at the answer: $36\text{mm}^2$ .
3	B. To calculate the area, the width needs to be multiplied by the length. If a 2D shape has an area of $480\text{cm}^2$ and one of its sides measures $12\text{cm}$ , its other side must measure $480 \div 12 = 40$ . The perimeter of the rectangle will therefore be $12\text{cm} + 40\text{cm} + 12\text{cm} + 40\text{cm} = 104\text{cm}$ .
4	Separate the compound shape into two smaller shapes. The first shape will measure $4\text{m} \times 9\text{m}$ and the other shape will measure $3\text{m} \times 5\text{m}$ . For the first shape, 8 slabs will be required for the smaller measurement and 18 for the larger measurement. ( $8 \times 18 = 144$ ). For the other shape, 6 slabs will be required for the smaller measurement and 10 for the larger measurement. ( $6 \times 10 = 60$ ). $144 + 60 = 204$ slabs required in total. Slabs come in boxes of 24, therefore 9 boxes would be needed (giving a total of 216 slabs).
5	The area of a triangle is equal to its base divided by 2. The larger triangle will have an area of $(3\text{m} \times 9\text{m}) \div 2 = 13.5\text{m}^2$ . The smaller triangle will have an area of $(3\text{m} \times 7\text{m}) \div 2 = 10.5\text{m}^2$ . $13.5\text{m}^2 + 10.5\text{m}^2 = 24\text{m}^2$
6	Leila's living room is $6\text{m}$ wide and the length is $1.5 \times$ the width. The length must be $6 \times 1.5 = 9\text{m}$ . The area is $9\text{m} \times 6\text{m} = 54\text{m}^2$ .
7	Perimeter is the distance around the outside of a shape. The perimeter will be $10.5\text{m} + 24.1\text{m} + 10.5\text{m} + 24.1\text{m} = 69.2\text{m}$ .
8	The area of a rectangle is calculated by multiplying the width by the length. If the area is $84\text{cm}^2$ and the width is $7\text{cm}$ , the length must be $84 \div 7 = 12\text{cm}$ .
9	The perimeter is the distance round the outside of a shape. The missing measurements are $4.5\text{cm}$ and $3\text{cm}$ . The perimeter can be calculated by adding $8.5\text{cm} + 4.5\text{cm} + 3\text{cm} + 3\text{cm} + 3\text{cm} + 3\text{cm} + 2.5\text{cm} + 4.5\text{cm} = 32\text{cm}$ .
10	A. The total area of the lawn and patio is $9 \times 9 = 81\text{m}^2$ . The area of the patio is $4.5 \times 6 = 27\text{m}^2$ , so the area of grass is $81 - 27 = 54\text{m}^2$ . $100\text{g}$ of seed for $6\text{m}^2$ means $54 \div 6 = 9$ , so $900\text{g}$ of seed is needed.

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## Statistics (pp.32–33)

1	If the mean (average) score is 30, the total for the four tests must equal 120. Three of the tests total 76. Therefore, the score for the fourth test must be $120 - 76 = 44$
2	If the range of the three children is 5 and the youngest is 6, Freddie must be $6 \text{ years} + 5 \text{ years} = 11 \text{ years old}$ .
3	A. $140\text{cm} + 124\text{cm} + 162\text{cm} = 426\text{cm}$ . $426\text{cm} \div 3 = 142\text{cm}$
4	$12\text{mm} + 25\text{mm} + 38\text{mm} + 43\text{mm} + 22\text{mm} + 16\text{mm} = 156\text{mm}$ . $156\text{mm} \div 6 = 26\text{mm}$
5	If the mean (average) age is 42, the three ages must add up 126. $38 + 45 = 83$ . $126 - 83 = 43 \text{ years old}$
6	If the mean (average) temperature is $17^{\circ}\text{C}$ , the four temperatures must add up to $68^{\circ}\text{C}$ . $16^{\circ}\text{C} + 14^{\circ}\text{C} + 18^{\circ}\text{C} = 48^{\circ}\text{C}$ . $68^{\circ}\text{C} - 48^{\circ}\text{C} = 20^{\circ}\text{C}$
7	The median of a set of numbers is the middle value in a set of data. Arranged in order of smallest to largest the numbers are: 7, 8, 10, 11, 11, 12, 12, 13, 14. The middle number (median) is 11.
8	The range is the difference between the highest and lowest temperature. $18^{\circ}\text{C} \text{ to } -3^{\circ}\text{C} = 21^{\circ}\text{C}$ .
9	The range is the difference between the fastest and slowest times. The fastest time is 39.18 and the slowest time is 42.40. $42.40 - 39.18 = 3 \text{ minutes } 22 \text{ seconds}$
10	Add the 1k distances: $8.44 + 7.45 + 7.53 + 8.54 = 31.96$ , which needs to be expressed in minutes and seconds (33.36). $33.36 \div 4 = 8 \text{ minutes and } 19 \text{ seconds}$
11	D. The mode is the value or item that occurs most often in a set of data. The number 6 occurs three times, 8 occurs once, 11 occurs three times, 12 occurs four times and 13 occurs once. The mode is 12.

## Measurement (pp.34–35)

1	Convert km to m ( $\times 1000$ ): $2.5\text{km} = 2500\text{m}$ . $2500 + 200 = 2700\text{m}$ for the total journey. Convert m to cm ( $\times 100$ ): $270,000\text{cm}$ .
2	If six sacks weigh 150kg, then one sack weighs $150 \div 6 = 25\text{kg}$ . If there 100 potatoes per sack, then the average potato weight is $25 \div 100 = 0.25\text{kg}$ . To convert to grams, multiply by 1000: $0.25 \times 1000 = 250 \text{ grams}$ .
3	E. Total drainage every hour will equal $40\text{cl} \times 4 = 160\text{cl}$ . 8 litres is equal to 800cl. $800 \div 160 = 5$
4	There are 60 minutes in 1 hour. Convert minutes to seconds = $60 \times 60 = 3600 \text{ seconds per hour}$ . To find the seconds in 15 hours: $10 \times 3600 = 36,000$ . Then add half of this again: $36,000 + 18,000 = 54,000 \text{ seconds}$ .

## Extended answers for Maths (ages 10–11)

5	Using the graph, we can see that 5 miles is equivalent to 8km. This is the only accurate reading. We can deduce that 80km = 50 miles. $120\text{km} = 80\text{km} + 40\text{km}$ , or $50 \text{ miles} + 25 \text{ miles} = 75 \text{ miles}$
6	Convert the digital scale kg to lbs: $4.5\text{kg} \times 2.2 = 9.9\text{lbs}$ . (1kg = 2.2lbs, so 0.5kg = 1.1lbs; $4 \times 2.2 = 8.8 + 1.1 = 9.9\text{lbs}$ .) Subtract the balance scale to find the difference: $10.3 - 9.9 = 0.4\text{lbs}$ .
7	12 cups holding 100ml each is 1200ml. The jug holds 1.5l (or 1500ml). $1200 + 1500 = 2700\text{ml}$ The bowl still has 300ml in it, so $300 + 2700 = 3000\text{ml}$ or 3 litres.
8	Total volume of the shape: $4\text{cm} \times 12\text{cm} \times 2\text{cm} = 96\text{cm}^3$ Total volume of a cube: $2\text{cm} \times 2\text{cm} \times 2\text{cm} = 8\text{cm}^3$ $96\text{cm}^3 \div 8\text{cm}^3 = 12 \text{ cubes}$
9	200g per hour gives 1kg every five hours ( $1000\text{g} = 1\text{kg}$ ). A 35kg block will take $35 \times 5 = 175$ hours to melt completely.
10	B. The volume of one pyramid: $\frac{1}{3} \times 7 \times 6 \times 10 = \frac{420}{3} = 140 \text{ cm}^3$ The volume for two pyramids is $2 \times 140 = 280 \text{ cm}^3$ .

### Speed, distance and time (pp.36–37)

1	Speed = distance $\div$ time. $21 \text{ miles} \div 3.5 \text{ hours} = 6\text{mph}$
2	Distance = speed $\times$ time. $560 \text{ miles} \times 6 \text{ hours} = 3360 \text{ miles}$
3	A. Time = distance $\div$ speed. $80 \div 50 = 1.6$ $1.6 \text{ hours} = 1 \text{ hour and } 36 \text{ minutes}$
4	The shortest route would be past the gift shop. $380\text{m} + 410\text{m} = 790\text{m}$
5	Speed = distance $\div$ time. $300 \div 50 = 6 \text{ metres per second}$
6	Jen walks at 4km per hour, which is 1km every 15 minutes, so she takes 30 minutes to walk 2km. Tom walks at 3km per hour, which is 1km every 20 minutes, so he takes 40 minutes to walk 2km. Tom arrives $40 - 30 = 10$ minutes after Jen.
7	Budapest to London is 1000 miles. Flying at 250mph, either divide 1000 by 250 or count in 250s ( $250 + 250 + 250 + 250 = 1000$ ). The journey takes 4 hours.
8	Distance = speed $\times$ time. $110 \text{ km} \times 6 \text{ hours} = 660 \text{ km}$
9	The total perimeter is $(80 + 40) \times 2 = 240\text{m}$ . Harry runs at 4 metres every second, so it will take $240 \div 4 = 60$ seconds.
10	E. Time = distance $\div$ speed. $30 \div 45 = 0.666r$ , which is closest to 40 minutes in the options given.

# Extended answers for Maths (ages 10–11)

## Geometry 1 (pp.38–39)

1	If two of the angles measure $50^\circ$ , they will total $100^\circ$ . Angles in a triangle add up to $180^\circ$ . $180^\circ - 100^\circ = 80^\circ$
2	If two of the angles measure $34^\circ$ and $28^\circ$ , they will total $62^\circ$ . Angles in a triangle add up to $180^\circ$ . $180^\circ - 62^\circ = 118^\circ$
3	B. The two angles marked a measure the same as each other. Angles on a straight line add up to $180^\circ$ . $180^\circ - 112^\circ = 68^\circ$ $68^\circ \div 2 = 34^\circ$
4	There are $360^\circ$ in a circle. The right angle is $90^\circ$ and the acute angle is $45^\circ$ : $90 + 45 = 135^\circ$ . The obtuse angle is $360 - 135 = 225^\circ$ .
5	Vertices are where three or more sides meet. A cube has 8 vertices.
6	In a regular hexagon, all the sides are of equal length. The interior triangles are all equilateral. Angles in an equilateral triangle are all equal. Angles in a triangle add up to $180^\circ$ . $180^\circ \div 3 = 60^\circ$
7	There are 12 numbers representing each hour on an analogue clock. The angles between each hour will be $360^\circ \div 12 = 30^\circ$ . 5 hours = $30^\circ \times 5 = 150^\circ$
8	Two diameters = 48cm, so one diameter = 24cm. The radius is half the diameter, giving 12cm.
9	Angles formed on alternate sides of a transversal between parallel lines are equal. The answer is $65^\circ$ .
10	Isosceles triangles have two sides of identical length. Because they are right-angled, and also the same length as the square, the bottom length of each triangle must also be 17cm. The base of the trapezium is two triangle lengths and one square length, which is $17 + 17 + 17 = 51$ cm.
11	C. Regular polygons have the same number of lines of symmetry as they have sides. A regular octagon has 8 sides, so the answer is 8.

# Extended answers for Maths (ages 10–11)

## Geometry 2 (pp.40–41)

1	A cuboid is a 3D shape.
2	There are 12 numbers representing each hour on an analogue clock. The angles between each hour are $360^\circ \div 12 = 30^\circ$ . A reflex angle measures between $181^\circ$ and $359^\circ$ . The reflex angle is $30^\circ \times 7 = 210^\circ$ .
3	The angle at the vertex (corner) of a square is $90^\circ$ , and the angle at the vertex of an equilateral triangle is $60^\circ$ , so angle $c = 30^\circ$ .
4	A regular pentagon has five sides. $70 \div 5 = 14\text{cm}$
5	The three angles of a triangle add up to $180^\circ$ , so $a + b$ must equal $90^\circ$ . Angle $a$ is twice angle $b$ , so $2b + b = 90^\circ$ . So, if $3b = 90^\circ$ , $b = 30^\circ$ .
6	12 edges – four on each ‘end’ face, and four edges connecting these faces.
7	<p>Only sticking the final square at side 4 will produce a correct net. The sides marked X will then join together when the net is folded. (Note that side 5 will join to side 1.)</p>
8	Looking at the centre and considering one of the diagonals, angles on a straight line add up to $180^\circ$ . The smaller angle is $60^\circ$ because it is an equilateral triangle, so $x$ must be $120^\circ$ .
9	The only shared lines of symmetry for a square and a hexagon are the horizontal and vertical lines. So, there are two lines of symmetry.
10	All four sides of a rhombus are identical. Counting around the side of the parallelogram gives $6b$ .

# Extended answers for Maths (ages 10–11)

## Data handling 1 (pp.42–43)

1	The number of right-handed girls is $48 - 4 = 44$ . The total number of boys is $100 - 48 = 52$ . The total number of right-handed children is $100 - 7 = 93$ . The total number of right-handed boys is $93 - 44 = 49$ boys.
2	$360^\circ \div 90 = 4^\circ$ per child. $72^\circ \div 4^\circ = 18$ children
3	E. 30 out of 90 children is one-third. One-third of $360^\circ$ is $120^\circ$ .
4	$7 + 8 + 3 + 6 + 12 + 9 = 45$ . $60 - 45 = 15$ children
5	Adding the numbers where sets intersect, but not the central three-fruit intersection, gives $6 + 8 + 9 = 23$ children.
6	Paris = 2.15 million, Rome = 2.9 million Counting on from 2.15 (or subtracting if preferred) gives 0.75 million.
7	$3 \times 4 = 12$ hours
8	Adding all the icons, we have 15. Each represents 3 hours, so $3 \times 15 = 45$ hours in total. Divide 45 hours by 6 months = 7.5 hours per month on average .
9	The morning is 3 hours, and the afternoon 2.5 hours, so the morning is 30 minutes longer.
10	A. In total there are 5.5 hours of lessons each day. $5.5 \times 180$ is equivalent to $55 \times 18$ , which equals 990 hours.

## Data handling 2 (pp.44–45)

1	28 children have packed lunches, 37 children have school lunches, and 14 go home. Therefore, $28 + 37 = 65$ children stay in school for their lunch.
2	60% of 5 = 3. The total owning a phone will then be $14 + 21 + 3 = 38$ children.
3	There are 14 children who own a laptop and a phone, out of a total of 63. For 14 in 63, both can be divided by 7, which can be simplified to 2 in 9.
4	48% of 1500 = 720 people.
5	Add the five temperatures together: $24 + 22 + 21 + 23 + 26 = 116$ . To find the average, divide by 5 days. $116 \div 5 = 23.2^\circ\text{C}$
6	In 2016, $51 + 75 = 126$ people had holidays. In 2017, $67 + 55 = 122$ people had holidays. In 2018, $82 + 33 = 115$ people had holidays. 2016 saw the greatest number of people having a holiday.

## Extended answers for Maths (ages 10–11)

7	In 2016, 24 more went abroad. In 2017, 12 more stayed in the UK. In 2018, 49 more stayed in the UK. $49 + 12 - 24 = 37$ people (Alternatively, add the total who stayed at home then subtract the total who went abroad.)
8	In 2017, $67 + 55 = 122$ people had holidays. If this number was shared equally for 2019, $122 \div 2 = 61$ people holidayed in the UK that year.
9	5 badger symbols represent $5 \times 100,000 = 500,000$ . 3.5 fox symbols represent $3.5 \times 100,000 = 350,000$ . There are $500,000 - 350,000 = 150,000$ more badgers.
10	Each square on the x-axis represents 10 seconds. $100^{\circ}\text{C}$ is reached after 1 minute 50 seconds.

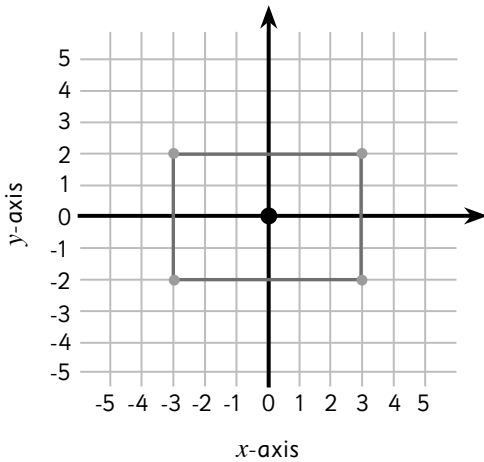
### Data handling 3 (pp.46–47)

1	The minimum temperature in the year is $9^{\circ}\text{C}$ (July and August). The maximum temperature is $28^{\circ}\text{C}$ (November and December). The difference is $28 - 9 = 19^{\circ}\text{C}$ .
2	The distance between Rome and Milan is 575km. The distance between Milan and Paris is 851km. $575\text{km} + 851\text{km} = 1426\text{km}$
3	B. Paris to Lisbon is 1735km. Madrid to Lisbon is 627km. Antoinette drives $1735 - 627 = 1108\text{km}$ further.
4	$360^{\circ} \div 90^{\circ} = 4^{\circ}$ . $180 \div 4 = 45$ students
5	Reading the bar chart, 18 children walk, 8 travel by bus, 1 by bike and 5 by car. So, $18 - 8 - 1 - 5 = 4$ more children walk than use any other transport.
6	8 out of a total of 32 children travel by bus. Simplifying, this is 1 out of 4, which is a quarter, or 25%.
7	Adam has 91 points and Caitlin has 83 points for the spring term. To find the average of 91 and 83, either add them and divide by 2, or find the difference, halve it, and then add it on. The difference is 8. Half of 8 is 4, so $83 + 4 = 87$ points.
8	Rainfall in May = $12\text{mm} \times 8 = 96\text{mm}$ . Rainfall in September = $12\text{mm} \times 3 = 36\text{mm}$ . $96\text{mm} - 36\text{mm} = 60\text{mm}$
9	A complete circle is $360^{\circ}$ , so if there are 36 dog places altogether, the chart has $10^{\circ}$ per space. The sector of the pie chart for lurchers is $130^{\circ}$ . Therefore, there are $130^{\circ} \div 10 = 13$ lurchers.
10	D. There are already 2 empty spaces, so with 4 greyhounds and 2 lurchers leaving there will be a total of 8 empty spaces. Each space is $10^{\circ}$ , so the new sector will be $80^{\circ}$ .



# Extended answers for Maths (ages 10–11)

## Coordinates (pp.48–49)

1	North – $135^\circ$ = south-west
2	Reflecting the point (4,1) in the vertical y-axis gives the point (-4,1). Then, reflecting this in the horizontal x-axis gives (-4,-1).
3	D. To translate (-3,-4) by (7,4), add 7 to -3, giving 4, and 4 to -4, giving 0. The new point is (4,0).
4	The new coordinates will be (4,3).
5	To get from (5,3) to the x-axis, go down 3. Then, to keep the lines parallel go back 3. This gives the point (0,2) on the x-axis.
6	When reflecting in a horizontal line ( $y = 3$ ) the x coordinate remains the same, so simply count up to the line (1 to 3 is two squares) then repeat this beyond the line, with two further squares going to (2,5).
7	
8	The coordinates of the point exactly halfway between the gym and the cafe will be (3,3).
9	The new coordinates will be (3,2).
10	B. Starting at (2,1) and going 4 along and then 4 up will give (6,5).

# Extended answers for Maths (ages 10–11)

## Algebra (pp.50–51)

1	Ben = $x$ . Harry = $(x + 3)$ . Tom = $(x + 5)$ . $3x + 8 = 65\text{kg}$ . $3x = 65 - 8$ . $3x = 57\text{kg}$ . $x = 19\text{kg}$ . Harry weighs 22kg.
2	$2x - 8 = 12$ . $2x = 12 + 8$ . $2x = 20$ . $x = 10$
3	$y$ is 5 so $3y = 15$ , so the $x$ term must equal 8 because $15 + 8 = 23$ . Now, $x$ is $-2$ so it must be $-4x$ ( $-2 \times -4 = +8$ ). So, $3y - 4x = 23$ is correct.
4	Rex = $x$ . Sam = $2x$ . Neha = $4x$ . Total $7x$ . $x = £100$ . Rex will receive £100 and be saving half of this, which is £50.00.
5	$25 \times 30 \times 2$ (children) + 100 (teacher). $1500 + 100 = 1600\text{cl}$ . $1600 \div 4 = 400\text{cl}$
6	The longest sides could be expressed as $2x$ and the shorter sides as $x$ . $2x + 4x = 6x$ . $72\text{cm} \div 6 = 12\text{cm}$ . The longer sides will be 24cm.
7	$3y + 4 \times 7 = 22$ , so $3y = 22 - 28$ , so $3y = -6$ , so $y = -2$ .
8	Oranges (£1.00 each) + bread (£1.10) + milk (80p) = £10 – change. Oranges $\times$ £1.00 + £0.90 = £10 – £0.10 So, oranges $\times$ £1.00 = £10 – £0.10 – £1.90 = £8. Josh bought 8 oranges.
9	Number of pieces = $56 \div 8 = 7$
10	The children receive one piece for every eight points: $2 \times 8 = 16$
11	D. The children receive one piece for every eight points: $11 \times 8 = 88$

## Mixed test 1 (pp.52–53)

1	The clock which is slow is the one showing the earlier time. $18:47 + 11$ minutes equals 18:58.
2	The number of children owning a cat and a dog is 9. $12 - 9 = 3$ children
3	C. Each line on the scale represents 0.01. $7.25 + 0.06 = 7.31$ .
4	$14\% + 24\% + 40\% = 78\%$ . Syd must have received $100\% - 78\% = 22\%$ . $22\%$ of 150 = 33 votes
5	Speed = distance $\div$ time. $6500 \div 13 = 500\text{mph}$
6	$512 \div 16 = 32$ . Chapter 11 will finish on page ( $11 \times 32$ ) 352. Chapter 12 will begin on page 353 and end 32 pages later on page 384.

## Extended answers for Maths (ages 10–11)

7	Four 50p coins (£2.00), eight 20p coins (£1.60), four 10p coins (40p), two 2p coins (4p). $£2.00 + £1.60 + 40p + 4p = £4.04$
8	There are 50 squares and 32 squares are shaded. $\frac{32}{50} = \frac{64}{100}$ . 64%
9	$60 - 15 = 45$ . $45 + 25 = 70$ . $70 - 8 = 62$ passengers
10	$3\text{km} + 4\text{km} = 7\text{km}$ . $7\text{km} \times 7$ (the number of days in a week) = 49km
11	A. $21 \times 8 = 168$ flowers

### Mixed test 2 (pp54–55)

1	If three-quarters of the cars are black, then one-quarter of the cars are other colours. One quarter of $240 = 60$ cars
2	$£15.80 + £12.20 + £11.75 + £18.30 + £16.70 + £20.20 + £14.50 = £109.45$
3	The 18:33 train journey takes 58 minutes. The 18:40 train journey takes 60 minutes. The 18:46 train journey takes 53 minutes. The fastest train takes 53 minutes.
4	$120\text{g} \times 14$ (the number of days in a fortnight) = 1680g. $3240\text{g} + 1680\text{g} = 4920\text{g}$
5	$300 \times 7\% = 21$ passengers
6	$30\text{m}^2 \div 7.50 = 4$ . The kitchen has a width of 4.0m.
7	There were 15 tractors on Monday and 45 tractors on Saturday. Therefore, there were 30 fewer tractors on Monday.
8	$\frac{15}{60}$ is equal to one-quarter or 25%. $100\% - 25\% = 75\%$
9	Brad + 2 actors + 43 actors + 240 extra actors + 48 production staff = 334. Rounded to the nearest ten is 330 people.
10	Joe's journey takes 32 minutes. Neil's journey takes 31 minutes. The boy who has the longest journey is Joe.

# Extended answers for Maths (ages 10–11)

## Mixed test 3 (pp.56–57)

1	The flight takes 43 minutes + 7 minutes = 50 minutes. 15:03 + 50 minutes = 15:53
2	D. The tickets will cost 1 adult fare plus 3 children's fares. $£11.75 + (£8.50 \times 3) = £25.50$ . $£11.75 + £25.50 = £37.25$
3	$11\text{m} + 5.5\text{m} + 2.5\text{m} + 2\text{m} + 6.5\text{m} + 3.5\text{m} + 2\text{m} + 7\text{m} = 40\text{m}$
4	$34 + 39 + 27 + 56 + 42 + 24 + 30 = 252$ pages. $252 \div 7 = 36$ pages
5	20% of 30 = 6. There are 30 + 6 elephants = 36 elephants.
6	The boys meet on Saturday 1st June. The next dates that Peter will visit the pool in June will be Saturday 8th June and Saturday 15th June. The next dates that Max will visit the pool in June will be Monday 3rd, Wednesday 5th, Friday 7th, Sunday 9th, Tuesday 11th, Thursday 13th and then Saturday 15th June.
7	The median of a set of numbers is the middle value in a set of data. Arranged in order of smallest to largest, the amounts are will be 25ml, 35ml, 40ml, 40ml, 45ml, 60ml, 75ml. The middle number (median) is 40ml.
8	Mr Mohamed's newspaper bill for the other six days of the week is $£9.40 - £2.80 = £6.60$ . $£6.60 \div 6 = £1.10$
9	B. If 40% of the doughnuts have been eaten, 60% must be left. 60% of 25 = 15
10	The workmen will take $(4000 \div 250)$ days. 16 days
11	$18:40 + 25$ minutes = 19:05. $19:05 + 90$ minutes = 20:35. $20:35 + 15$ minutes = 20:50

## Mixed test 4 (pp.58–59)

1	Joshua must have got 45% of the exam incorrect. 45% of 60 = 27 questions
2	C.Swati's change would have been £2.80. $£2.80 \div 20\text{p} = 14$
3	Sales for 1st March = 35, 2nd March = 15, 3rd March = 30 and 4th March = 25. $35 + 15 + 30 + 25 = 105$ books
4	20% of 260 = 52. $260 - 52 = 208$ passengers
5	The larger bag of potatoes weighs $(3 \times 6\text{kg}) = 18\text{kg}$ . $6\text{kg} + 18\text{kg} = 24\text{kg}$ or 24,000g.
6	One bar stool costs $£230.00 \div 4 = £57.50$ . Three bar stools will cost $£57.50 \times 3$ , which is £172.50.

## Extended answers for Maths (ages 10–11)

7	E. $£140 \times 20\% = £28$ . Samara will have to pay $£140 - £28 = £112$
8	$7\text{cm} + 3\text{cm} + 4\text{cm} + 8\text{cm} + 5\text{cm} + 6\text{cm} + 6\text{cm} + 5\text{cm} = 44\text{cm}$
9	23rd August + ten days (there are 31 days in August) = 2nd September
10	600 Thai baht is equal to £30. Therefore, 1200 Thai baht must equal £60.00.

### Mixed test 5 (pp.60–61)

1	$21 \div 3 = 7$ . $7 \times 7 = 49$ black cars
2	20% of 90cm = 18cm. $90\text{cm} - 18\text{cm} = 72\text{cm}$
3	The total bill will be $£280 + (£175 \times 4) = £980$ . 20% of $£980 = £196$ . $£980 + £196 = £1176.00$
4	B. North – $90^\circ$ anti-clockwise = west
5	$£336 - £24 = £312$ . $£312 \div 2$ will give the lower amount of $£156.00$ .
6	$142 - 7 = 135$ . $135 \div 3 = 45$
7	$57\text{cm} \div 2.5\text{cm} = 22.8$ . Toby can fit 22 books on his bookshelf.
8	D. $82 + 79 + 89 = 250$ . $250 + 48 = 298$
9	If $\frac{5}{8}$ of people preferred to watch movies at home, then $\frac{3}{8}$ preferred the cinema. $\frac{3}{8}$ of 72 = 27 people
10	$11\text{ metres} + 26\text{ metres} + 11\text{ metres} + 26\text{ metres} = 74\text{ metres}$
11	If Mumbai is $5\frac{1}{2}$ hours ahead of London, Stella's flight must have taken off at 03:30 London time. $03:30$ to $13:30 = 10$ hours
12	B. $£7.50 \div 3 = £2.50$ for each child. Then Zak earns an extra $£3.50$ . The total he earned is $£6.00$ .