

Y9 Spring KAP P1 Mark Scheme

1	65 min	B1	
2	5 cm	B1	
3	14a + 3b or 3b + 14a	B2	B1 14a or (+)3b
Additional Guidance			
	14a + 3b followed by further work eg 17ab		B1
	B1 response followed by further work eg 2a + 3b = 5ab		B1
4	30	B1	
	20	B1	
	(30 and 20 and) 600	B1ft	ft their 30 × their 20 with B1B0 or B0B1 SC1 (31×18 =) 558, answer 560
Additional Guidance			
	Answer 600 only with no working		B1B1B1
	Answer 558 with neither 30 nor 20 seen		B0
	30 × 18 with answer 540		B1B0B1ft
	31 × 20 with answer 620 and answer 600 (ignore further work)		B0B1B1ft
	31 × 20 with answer 600		B0B1B0ft
5	33 ÷ (3 + 5) or 32 ÷ 8 or 4 Or build up in 4s	M1	Clear intention to divide Do not accept 8 ÷ 32 unless clearly recovered
	their 4 × 3 or 12 or their 4 × 5 or 20	M1dep	
	12 and 20	A1	
Additional Guidance			
	20 and 12		M1M1A0
	12 : 20		M1M1A1
	Partial build up using ratios from 3 : 5 (eg 9 : 16) is 0 unless correct answer achieved		
6	Any two correct values in the table	M1	implied by at least two correct points plotted
	At least two points plotted correctly or At least two of their points plotted correctly	M1	implied by correct line drawn (which may not be the full length)
	Correct line from (-1, -4) to (3, 8)	A1	±half a small square ignore line outside of x = -1 and x = 3
Additional Guidance			
	Correct line drawn with at least one point plotted incorrectly or at least one value incorrect in the table cannot score full marks		
7	180 – 21 – 47	M1	oe
	112	A1	
8	5n – 2	B2	B1 5n + k

9a	4	B1	
9b	9	B1	
9c	20	B1	

10	7 from list 1 1 2 3 8	B3	B2 5 integers with at least 2 criteria met B1 5 integers with any one criterion met
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11	$y = x - 6$	B1	
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12	$\frac{35}{45} (+) \frac{18}{42}$	M1	oe fractions with a correct common denominator and at least one correct numerator
	$\frac{53}{42}$	A1	oe improper fraction
	$1 \frac{11}{42}$	B1ft	oe mixed number ft for correct conversion of an improper fraction to a mixed number

Additional Guidance

	For B1ft the mixed number must not be an integer	
	Beware $5 + 3 = 53$	M0
	Incorrect attempts to cancel the fractions cannot score full marks	

13a	30 or $\frac{1}{2}$ and 15 or $\frac{1}{4}$ or 45 or $\frac{3}{4}$	M1	oe Allow no units or incorrect units May be on graph
	45 minutes or $\frac{3}{4}$ hour	A1	oe

Additional Guidance

	Allow abbreviated units eg 45 min(s) or $\frac{3}{4}$ h	M1A1
	Condone 45m	M1A1
	45 minutes or $\frac{3}{4}$ hour in working with answer 45 or $\frac{3}{4}$	M1A1
	0.3 + 0.15 is M0 unless recovered to 45	

13b	29 or $4 + 25$	M1	oe may be embedded 29 may be on the graph eg on y-axis
	58	A1	SC1 54

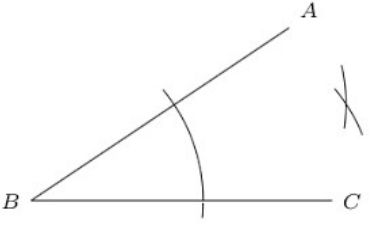
Additional Guidance

	29 x 2 with no or incorrect evaluation	M1A0
	Allow the first mark embedded in a calculation eg $29 + 4$ or $29 + 5 + 25$ or $29 + 25 + 25$ or $29 - 5$	M1A0

13b	29 or $4 + 25$	M1	oe may be embedded 29 may be on the graph eg on y-axis
	58	A1	SC1 54

Additional Guidance

	29 x 2 with no or incorrect evaluation	M1A0
	Allow the first mark embedded in a calculation eg $29 + 4$ or $29 + 5 + 25$ or $29 + 25 + 25$ or $29 - 5$	M1A0

14		M1	oe
	Angle bisector from A	A1	Must score the M to get the A
Additional Guidance			
	Must see arcs, not dots, as these could be measured with a ruler		
	Other method used must be fully correct for the award of M1, but allow inaccuracies in compass use		

15a	Higher temperature, lower soup sales or Lower temp, more soup sold	B1	
	Additional Guidance		
	Less soup when warm		B1
	Sales go down as temperature goes up		B1
	Sell more soup when it is cold		B1
	As temperature gets higher the soup gets lower		B1
	The hotter the day is the less people want soup because it is hot		B1
	The hotter the temperature the less likely someone is going to buy soup		B1
	When more soup is sold the weather gets colder		B0
	Soup sales depend on temperature		B0
	Negative correlation		B0
	As the temperature decreases the monthly sales of soup decreases		B0
	As the soup gets hotter the sales go down		B0
	The lower the average the more sales of soup		B0
	It decreases as monthly temperature increases		B0

15b	Straight line of best fit drawn	M1	Must be long enough to go between [(4, 460), (4, 600)] and [(22.5, 120), (25, 180)]
	470	A1ft	Ft their line if M1 awarded (\pm half square) Must be read from 7 (\pm half square) SC1 no LOBF or wrong LOBF and answer in range [420, 540]
Additional Guidance			
	LOBF in range and answer in range, but read from 7.5		M1A0

16	Alternative method 1		
	radius = $12 \div 4$ or 3 or diameter = $12 \div 2$ or 6 or 12×6 or 72	M1	
	$\pi \times \text{their } 3^2$ or 9π	M1	
	$2 \times \pi \times \text{their } 3^2$ or 18π	M1dep	
	$72 - 18\pi$	A1	Ignore attempts at factorisation but do not ignore other further work
	Alternative method 2		
	radius = $12 \div 4$ or 3 or diameter = $12 \div 2$ or 6 or 6×6 or 36	M1	
	$\pi \times \text{their } 3^2$ or 9π	M1	
$36 - 9\pi$	M1dep		

	$2(36 - 9\pi)$	A1	Ignore attempts at expansion but do not ignore other further work
Additional Guidance			
	$72 - 18\pi = 54\pi$		M3A0
	$72 - 18\pi = 9(8 - 3\pi)$ (error in factorisation)		M3A1
	Accept 3.14 or better for π for method marks		

17	Alternative method 1		
	$\frac{16}{40}$ or $\frac{25}{40}$ or $\frac{20}{40}$	M1	
	Valid comparison eg $\frac{16}{40}$ and $\frac{25}{40}$ and $\frac{20}{40}$ or $\frac{4}{40}$ and $\frac{5}{40}$	M1	oe
	$\frac{2}{5}$	A1	Must see working
	Alternative method 2		
	0.4 or 0.625 or 0.5	M1	40(%) or 62.5(%) or 50(%)
	0.4 and 0.625 and 0.5 or 0.1 and 0.125	M1	40(%) and 62.5(%) and 50(%) or 10(%) and 12.5(%)
	$\frac{2}{5}$	A1	Must see working

18	(C has coordinates) (2, 4)	B1	
	(Gradient =) -2	B1	Implied by $y = -2x\dots$
	$\frac{-1}{\text{their gradient}}$ or (gradient =) $\frac{1}{2}$	M1	Implied by $y = \frac{1}{2}x\dots$
	their 4 = their $\frac{1}{2}$ x their 2 + c or c = 3	M1	oe
	$y = \frac{1}{2}x + 3$	A1ft	oe ft their coordinates of C and their initial gradient if M1M1 scored
Additional Guidance			
	(Gradient =) $\frac{1}{2}$ or $y = \frac{1}{2}x\dots$ implies the second B mark and the first M mark		

19	At least two of 2^3 , 3^2 , 7	M1	May be seen in a tree Allow 2^3 to be $2 \times 2 \times 2$ or 8 Allow 3^2 to be 3×3 or 9 Allow 7 to be 7^1 Inclusion of 5 in selection is M0
	504	A1	
Additional Guidance			
	$8 \times 9 \times 7$		M1
	8, 9, 49		M1
	$4 + 9 + 7$		M1
	Intersecting circles with eg only 9 and 7 in the intersection		M1
	Allow inclusion of 1 for up to M1 eg $1 \times 2^3 \times 3^2 \times 7$		M1
	$2^3 \times 3^2 \times 5 \times 7$		M0
	Answer 504		M1A1