

# The City School

Mid Year Examination

2016 - 2017

Class 11

Mathematics - Paper 1

## Answer Key



Q1. (a)(i) 0.20 (ii) 0.196

(b)  $\frac{7}{12}$   $\frac{5}{8}$   $\frac{13}{20}$  0.64 0.7

Q2. Lines Order  
0 2  
4 4  
1 ~~0~~ 1

Q3. (a) 3 (b) inversely

Q4. (a)  $\frac{1}{9}$  (b)  $\square 2$

Q5. (a)  $\square 2$  (b)  $-\frac{1}{2} \begin{pmatrix} 4 & -2 \\ -3 & 1 \end{pmatrix}$  (c) (10)

Q6. (a)  $8.0 \times 10^{-9}$  (b)  $1.024 \times 10^6$

Q7. (a) 49 (b) 18

Q8. (a) 4.25 (b) 2.55

Q9. (a) 10 (b) \$ 20  $\rightarrow$

Q10. (a)  $\frac{4x+17}{6}$  (b)(i)  $(a+b)(a \square b)$

(ii) 8114 (c)  $\frac{ma-b}{m}$

Q11. (a) 01 00 next day (b) 00 08

Handwritten calculations:  
 $\frac{25}{10} = 2.5$   
 $\frac{62.5}{6.25} = 10$   
 $x : 62.5 = 1 : 6.25$

Q12. (a)  $2^2 \times 3^3$  (b)  $2 \times 3^2$  or 18 (c)  $n = 6$

Q13. (a) 6800 (b)  $x = 10, y = 22.5$

Q14. (a)(i)  $28^\circ$  (ii)  $47^\circ$   
(b)(i) 28 (ii) 68

Q15. (a) 13 (b)(i)  $\frac{5}{13}$  (ii)  $-\frac{12}{13}$

Q16. (a)(i)  $233^\circ$  (ii)  $305^\circ$  (b) 10 18

Q17. (a) column 4  $\rightarrow$  16, 25, 16, 41

column  $n \rightarrow n^2, 4n, 4n + (n - 1)^2 + n^2$  (b)  $12^{\text{th}}$ .

Q18. (a)  $10^\circ$  (b)  ~~$140^\circ$~~   $20^\circ$  (c)  $60^\circ$

Q19 (a) 31 (b) 6 (c) 5

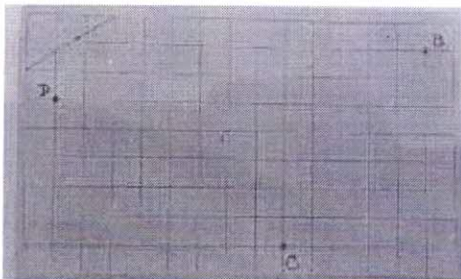
Q20. (a)  $(4, 12), (4, 18)$  and  $(1, 18)$  (b)  $90^\circ$  anticlockwise about  $(0, 11)$

(c)(i)  $90^\circ$  clockwise rotation centre origin. (ii) stretch, SF =  $1/3$ ,  $y$  axis invariant.

Q21. (a)(i)  $P = (12, 0), Q = (6, 0)$  (ii)  $R = (0, 12)$  (b)  $x = 2$

Q22. (a) O, E, F and A (b) E (c)  $2y < x$

Q23.



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MATHEMATICS - Paper 2

## Answer Key



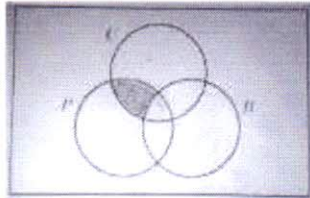
Q1. (a)  $x = 3, y = -2$  (b)(i)  $58^\circ$  (ii)  $36^\circ$  (c)  $1800^\circ$

Q2. (i) Correct working, showing the time difference of the two cars equal to 6 minutes.

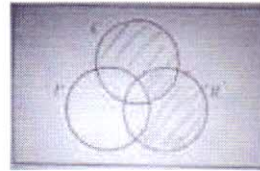
(ii)  $x = 61.5$  and  $y = 58.5$  (iii) 117.1 minutes.

Q3. (i)  $p = \frac{3}{15}, r = \frac{4}{14}, s = \frac{2}{14}$  (ii)(a)  $\frac{4}{15}$  (b)  $\frac{32}{105}$  (iii)  $\frac{22}{35}$

Q4. (a)(i)



(ii)



(b)  $(X \cap Y) \setminus (X \cup Y)$

(c)(i)  $\{5, 7, 11, 13\}$

(ii)  $\square$

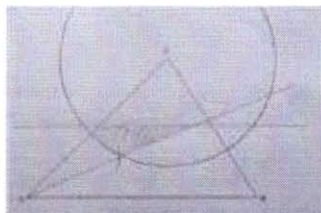
(iii)  $\{5, 7, 8, 9, 10, 11, 13, 14\}$

Q5. (a)(i) 1 (ii)  $\frac{6x-2}{x-3}$  (b) 2.197 (c)(i)  $960 + 30x$  (ii) 1200

Q6. (a)  $y = x + 1$  (b)  $(7, 2)$  (c) parallelogram (d)  $(\square, 2)$

Q7. (a) <sup>900</sup>850 km ( $\pm 10$ ) (b)  $328^\circ (\pm 1^\circ)$  (c)(i) circle of 4.8 cm at C (ii) parallel line 3 cm above AB. (iii) angle bisector at A.

(d)



Q8. (a)(i) \$ 30 (ii) 29 % (iii) 877.5 kg (b) \$ 950 (c) 51 tables.

Q9. (a) 30.4 cm (b)  $\cos 28^\circ = \frac{x}{16}$  (c)(i) 28 cm (ii)  $\frac{1}{2} \times 28 \times 14.5$   
(iii)  $28.5^\circ$ .

- Q10.** (a)  $p = 1.41$       (b) smooth curve with correct scale      (c) symmetrical about the point  $(2, 0)$  with rotational symmetry of order 2.      (d)  $4.6 (\pm 0.1)$       (e) 2 (1.5 ~ 2.5)
- Q11.** (a)(i) 60.8      (ii)  $6 < h \leq 8$       (iii)  $105^\circ$       (b) 25, 55, 90, 115, 120.  
 (c) smooth curve      (d)(i)  $3.6 (\pm 0.2)$       (ii)  $75 (\pm 2)$       (iii)  $9.5 (\pm 0.2)$
- Q12** (a)(i) 5      (ii) 5      (iii)(a)  $(0, 2)$       (b)  $305^\circ (\pm 2^\circ)$   
 (b)(i) correct drawing      (ii) shear, SF = 3,  $x=0$  invariant line      (c)(i)  $(-2, 3)$   
 (ii)  $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$