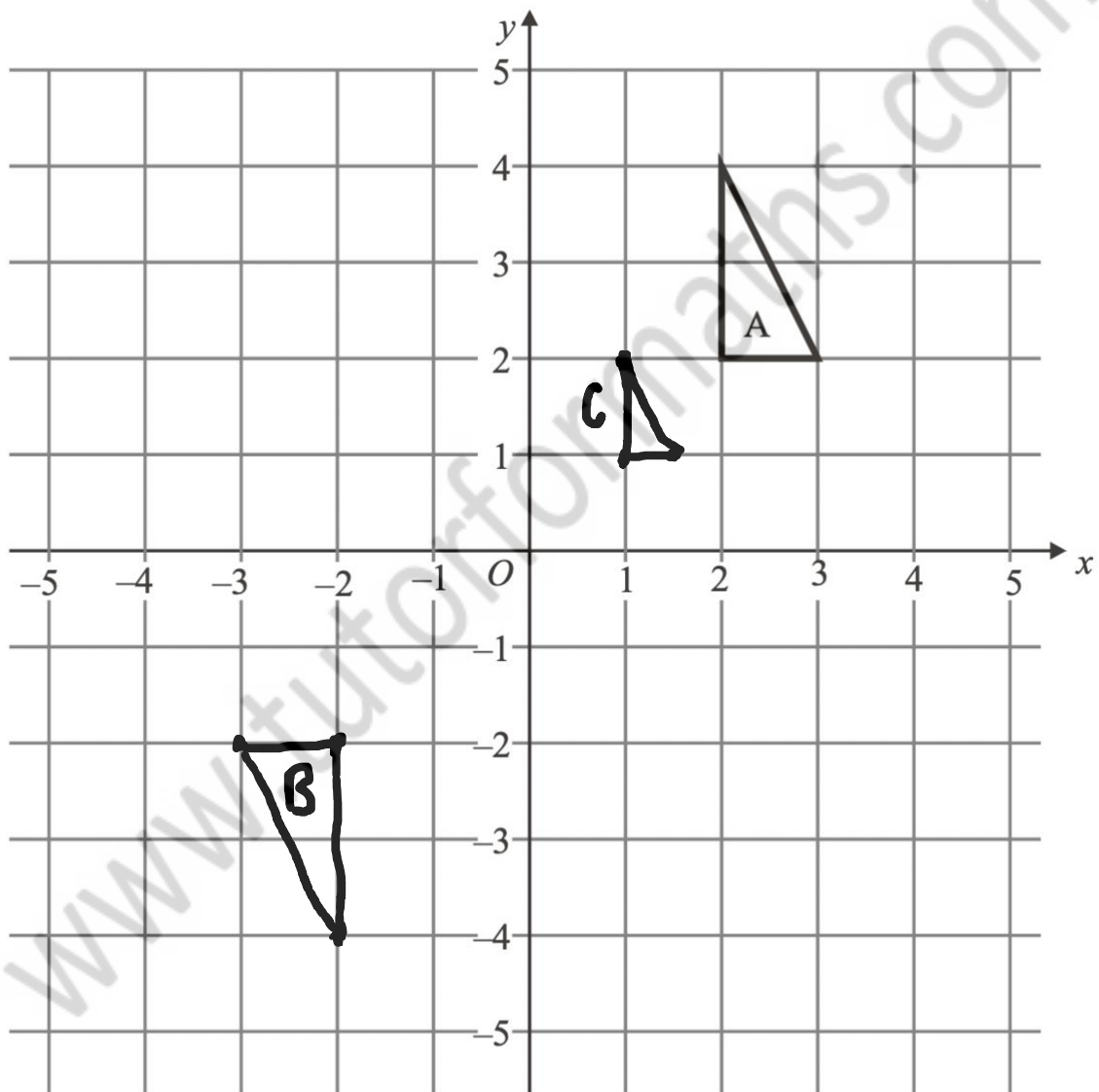
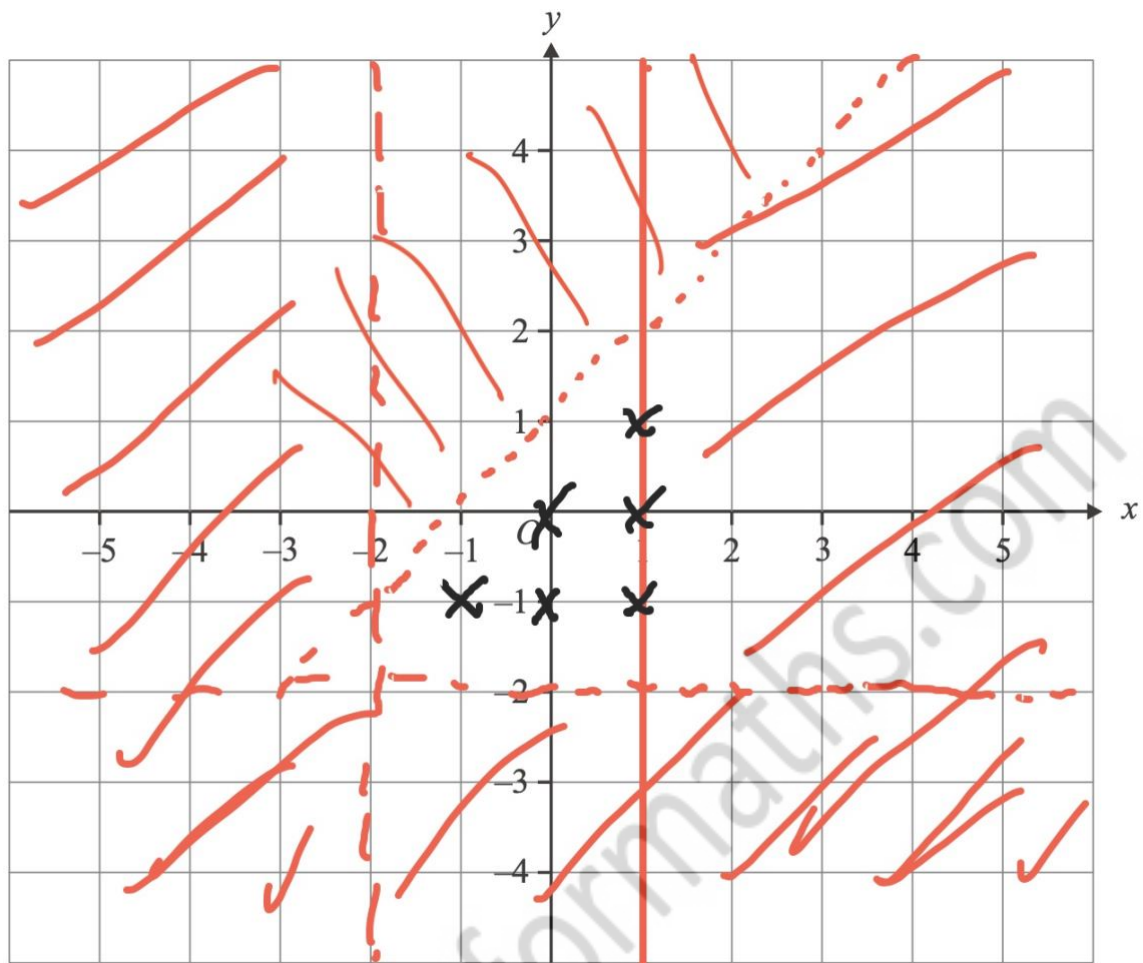


St Edward's Oxford 16+ 2018 solutions

- 1) 9.51m
- 2) a) $4.8 \times 10^7 km$
b) 230,000km
- 3) The second, fifth and seventh
- 4)



- 5) $\frac{29}{99}$
- 6) a) -1, 0, 1
b)



7) a) $x = -15$

b) i) $(x-21)(x-2)$

ii) $x = 2$ or 21

c) $(x+y)(x+y-3)$

8) a) Area = 400

$$\frac{x+20}{2} \times 2x = 400$$

$$x^2 + 20x = 400$$

b) $x = 12.4\text{cm}$

9) a) 60kg

b) $w = \frac{200p-20}{3}$

c) $A = \frac{12w+80}{60-w}$

10) $x = -0.5$ or 1.5

11) a) $CE = a + b$

b) $FE = FC + CE$

$= (a - b) + (a + b) = 2a$, which is a multiple of CD hence parallel.

c) $FM = 2\mathbf{a} - \frac{1}{2}\mathbf{b}$

d) $CX = CF + \frac{4}{5}FM = (\mathbf{b}-\mathbf{a}) + \frac{4}{5}(2\mathbf{a}-\frac{1}{2}\mathbf{b}) = \frac{3}{5}\mathbf{a} - \frac{3}{5}\mathbf{b}$, which is a multiple of CE, so they are parallel. They also share a point in common (X) so CXE is a straight line.

13) $A=2, k=\pm 6$

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