

Section 1 – Core (40 marks)

Attempt questions 1 – 9

Allow approximately 40 minutes for this section

Multiple Choice Questions (6 marks) – Circle the correct option on the answer paper.

1. Which of the following is equal to $2^2 \times 2^4$?

A. 4^8

B. 2^8

C. 4^6

D. 2^6

2. Which of the following is equal to $(-4f)^0$?

A. 0

B. 1

C. -4

D. $-4f$

3. Solve the equation: $5a = 15$

A. $a = 10$

B. $a = 3$

C. $a = -3$

D. $a = 20$

4. Simplify the expression: $3x + 2y + x + 7y$

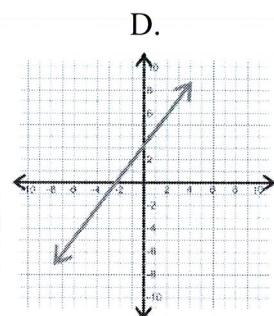
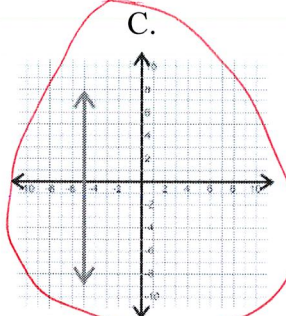
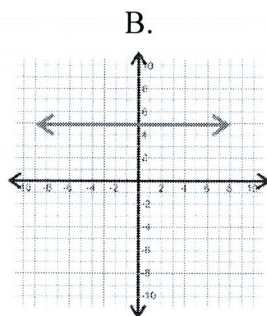
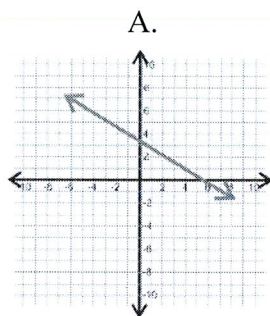
A. $6x + 5y$

B. $4x + 9y$

C. $2x - 9y$

D. $3x - 9y$

5. Which of the following lines has an undefined gradient?



6. Select the coordinates for the y-intercept shown in the table below:

x	-2	-1	0	1	2
y	8	6	4	2	0

A. (0,4)

B. (0,2)

C. (4,0)

D. (2,0)

Section 2 – Standard (40 marks)

Attempt questions 1 – 9

Allow approximately 50 minutes for this section

Multiple Choice Questions (6 marks) – Circle the correct option on the answer paper.

1. Which of the following is equal to $4f^2 \times 2f^{-4}$?

$= 8f^{-2}$

A. $6f^{-8}$

B. $8f^{-2}$

C. $6f^{-2}$

D. $8f^{-8}$

2. Which of the following is equal to $\frac{(n^3)^4}{n^5}$?

$= \frac{n^{12}}{n^5} = n^7$

A. n^7

B. n^2

C. $\frac{1}{n^2}$

D. n^{-7}

3. Expand the following expression: $5b(b + 1) - 7$

$5b^2 + 5b - 7$

A. $5b - 6$

B. $5b + 8$

C. $5b^2 + 5b - 7$

D. $10b - 7$

4. Evaluate the following equation if $v = 7$, $t = 4$, $a = 9$

$(7 \times 4) + \left(\frac{9 \times 4^2}{2} \right) = 100$

$v \times t + \frac{a \times t^2}{2}$

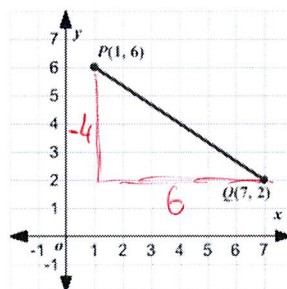
A. 676

B. 100

C. 2016

D. 46

5. What is the gradient of the following line segment?



rise = -4
run = 6

$m = \frac{-4}{6} = \frac{-2}{3}$

A. $\frac{2}{3}$

B. $\frac{-3}{2}$

C. $\frac{3}{2}$

D. $\frac{-2}{3}$

6. Which of the following points lies on the line $y = 2x - 4$?

~~$2 = 2 \times 0 - 4$~~

A. (0, 2)

~~$5 = 2 \times 6 - 4$~~

B. (6, 5)

$2 = 2 \times 3 - 4$

C. (3, 2)

~~$0 = 2 \times 4 - 4$~~

D. (4, 0)

Section 2 – Advanced (40 marks)

Attempt questions 1 – 9

Allow approximately 50 minutes for this section

Multiple Choice Questions (6 marks) – Circle the correct option on the answer paper.

1. Write the following in surd form: $(x^{\frac{1}{2}})^{\frac{1}{2}}$

A. x

B. $\sqrt[4]{x}$

C. x^2

D. $\sqrt[2]{x}$

2. Write the following in fractional index form: $\sqrt[3]{16}$

A. $2^{\frac{2}{3}}$

B. $2^{\frac{3}{2}}$

C. $2^{\frac{4}{3}}$

D. $2^{\frac{3}{4}}$

3. Solve the following quadratic equation: $72 - 2y^2 = 0$

A. $y = 6$

B. $y = 8.49$

C. $y = \pm 6$

D. There is no answer

4. Solve the following inequality: $7x - 5 < 2$

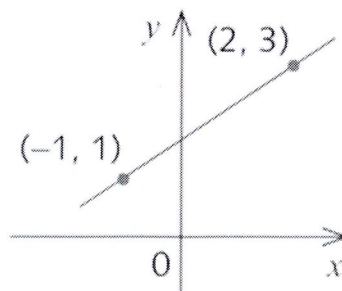
A. $x > 1$

B. $x \geq 0$

C. $x \leq 0$

D. $x < 1$

5. The equation of the line below is:



A. $3y - 2x = 5$

B. $y = \frac{3}{2}x + \frac{5}{3}$

C. $2y - 3x = 5$

D. $y = 3x + 5$

6. Which of the following is true for the linear equation:

$$x - 13y = 4$$

- A. The x -intercept is -4 and the y -intercept is 1
- B. The x -intercept is 4 and the y -intercept is $-\frac{4}{13}$
- C. The x -intercept is 4 and the y -intercept is $\frac{13}{4}$
- D. The x -intercept is 1 and the y -intercept is -13