



MARKER CODE			

STUDENT ENROLMENT NUMBER									



Sāmoa Secondary Leaving Certificate MATHEMATICS 2015

QUESTION and ANSWER BOOKLET

Time allowed: 3 Hours and 10 Minutes

INSTRUCTIONS

1. You have 10 minutes to read **before** you start writing.
2. Write your **Student Education Number (SEN)** in the space provided on the top right hand corner of this page.
3. Answer **ALL QUESTIONS**. Write your answers in the spaces provided in this booklet.
4. If you need more space for answers, ask the Supervisor for extra paper. Write your SEN on all extra sheets used and clearly number the questions. Attach the extra sheets at the appropriate places in this booklet.
5. **All the formulas required are provided in this Booklet.**

SECTIONS	Pages	Time (Minutes)	Weighting
SECTION A: MULTIPLE CHOICE QUESTIONS	2	54	30
SECTION B: EXTENDED RESPONSES	20	126	70
TOTAL		180	100

Check that this booklet contains pages 2- 44 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

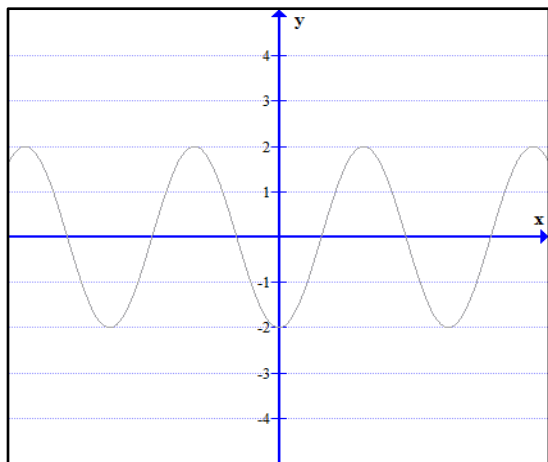
1. Find the values of integers a and b such that

$$\frac{1}{\sqrt{5}-2} = a + b\sqrt{5}$$

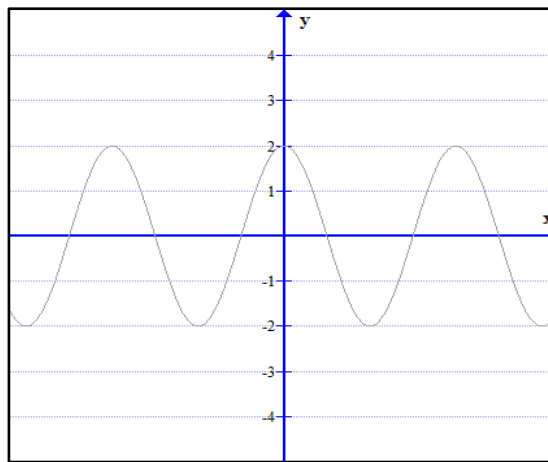
- A. $a = -2, b = -1$
- B. $a = -2, b = 1$
- C. $a = 2, b = 1$
- D. $a = 2, b = -1$
- E. $a = 1, b = -2$
2. The solution set of the logarithmic equation $\ln(x + 6) = 2 \ln x$ is
- A. $\{3, 2\}$
- B. $\{2\}$
- C. $\{3, -2\}$
- D. $\{6\}$
- E. $\{3\}$

3. Which diagram shows the graph of $y = 2 \sin\left(x - \frac{\pi}{2}\right) + 1$?

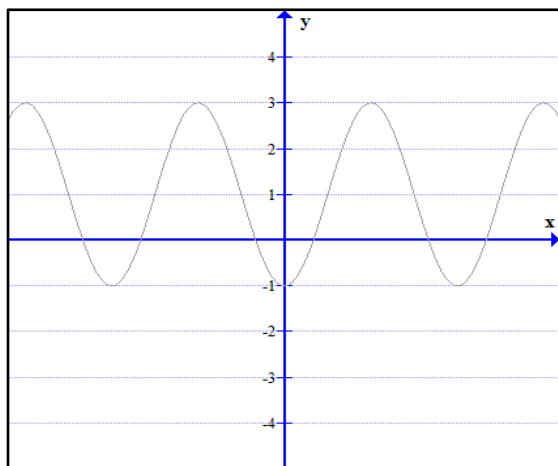
A.



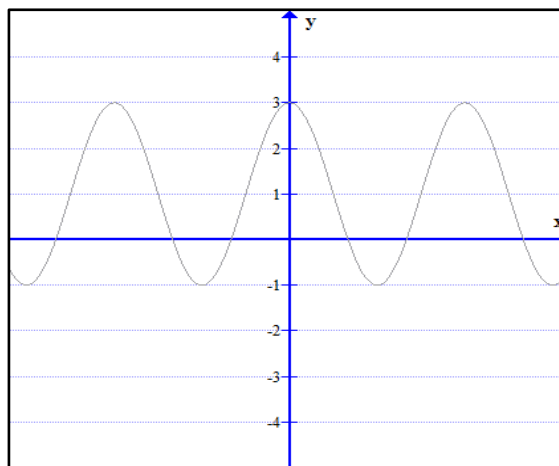
B.



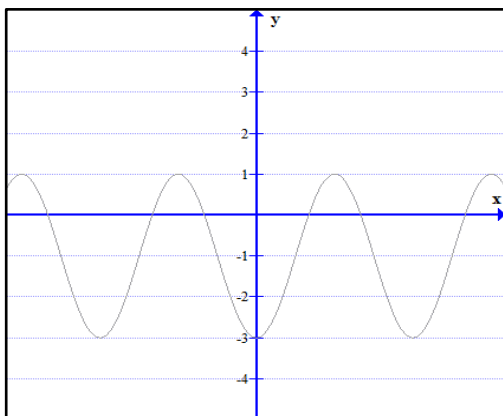
C.



D.



E.



4. Given

$$P(x) = (x + 1)(x - 3)Q(x) + ax + b,$$

where $Q(x)$ is a polynomial and a and b are real numbers. What are the values of a and b if $P(x)$ has a factor of $x - 3$ and a remainder of 8 when $P(x)$ is divided by $x + 1$?

- A. $a = 1, b = 6$
- B. $a = -4, b = 12$
- C. $a = -2, b = 6$
- D. $a = -1, b = 6$
- E. $a = 4, b = -12$

5. The point $P(4, -3)$ lies on the graph of a function f . The graph of f is translated four units vertically up and then reflected in the y -axis. The coordinates of the final image of P are

- A. $(-4, 1)$
- B. $(-4, 3)$
- C. $(0, -3)$
- D. $(4, -6)$
- E. $(-4, -1)$

6. Which expression is a term of the geometric series $3x - 6x^2 + 12x^3 - \dots$?

A. $3072x^{10}$

B. $-3072x^{10}$

C. $3072x^{11}$

D. $-3072x^{11}$

E. $-3072x^{12}$

7. Three runners compete in a race. The probabilities that the three runners finish the race in under 10 seconds are $\frac{1}{4}$, $\frac{1}{6}$ and $\frac{2}{5}$ respectively. What is the probability that at least one of the three runners will finish the race in under 10 seconds?

A. $\frac{1}{60}$

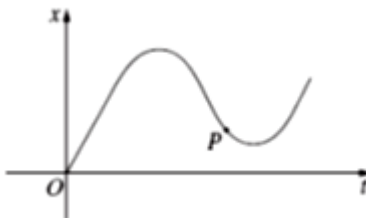
B. $\frac{37}{60}$

C. $\frac{3}{8}$

D. $\frac{5}{8}$

E. $\frac{7}{8}$

8. The graph shows the displacement x of a particle moving along a straight line as a function of time t .



Which statement best describes the motion of the particle at the point P ?

- A. The velocity is negative and the acceleration is positive.
 - B. The velocity is negative and the acceleration is negative.
 - C. The velocity is positive and the acceleration is positive.
 - D. The velocity is positive and the acceleration is negative.
 - E. The velocity is constant and the acceleration is constant.
9. The acute angle between the lines $2x + 2y = 5$ and $y = 3x + 1$ is θ . What is the value of $\tan \theta$?

- A. $\frac{1}{7}$
- B. $\frac{1}{2}$
- C. 1
- D. 2
- E. 3

10. A particle is moving in simple motion with a period 6 and amplitude 5. Which is a possible expression for the velocity, v , of the particle?

A. $v = \frac{5\pi}{3} \cos\left(\frac{\pi}{3} t\right)$

B. $v = 5 \cos\left(\frac{\pi}{3} t\right)$

C. $v = \frac{5\pi}{6} \cos\left(\frac{\pi}{6} t\right)$

D. $v = 5 \cos\left(\frac{\pi}{6} t\right)$

E. $v = \frac{5\pi}{3} \cos\left(\frac{\pi}{6} t\right)$

11. What are the solutions of $2x^2 - 5x - 1 = 0$?

A. $x = \frac{-5 \pm \sqrt{17}}{4}$

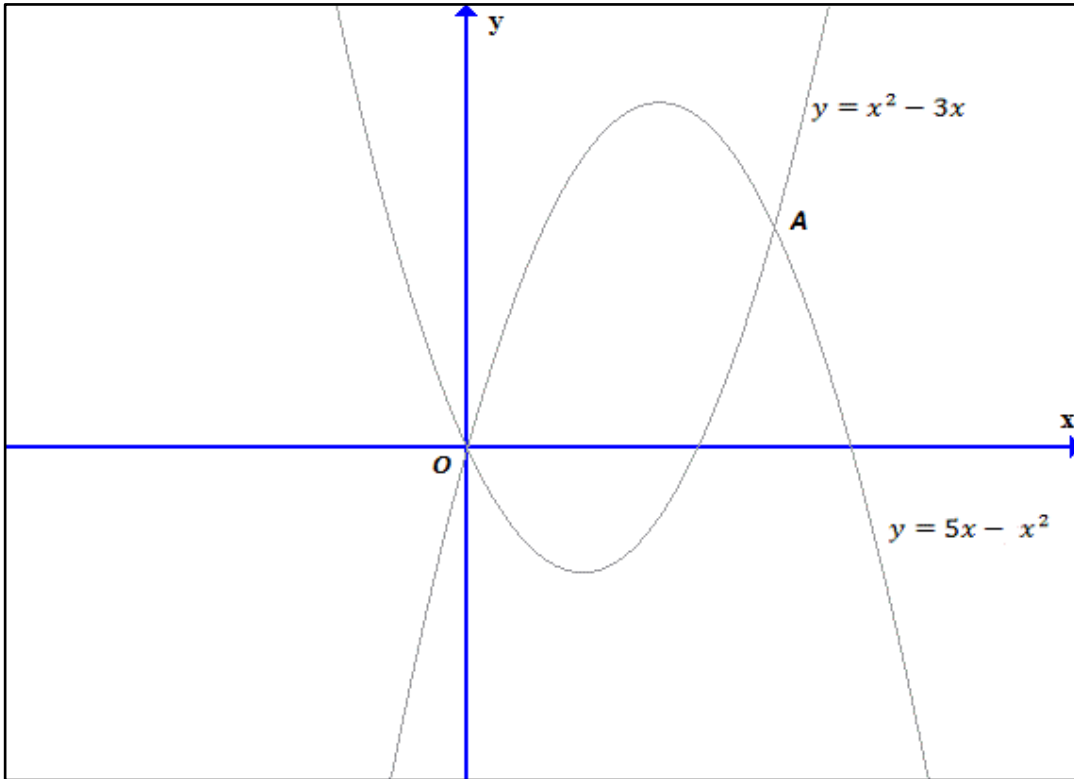
B. $x = \frac{5 \pm \sqrt{17}}{4}$

C. $x = \frac{-5 \pm \sqrt{33}}{4}$

D. $x = \frac{5 \pm \sqrt{31}}{4}$

E. $x = \frac{5 \pm \sqrt{33}}{4}$

12. The following diagram shows the parabolas $y = 5x - x^2$ and $y = x^2 - 3x$. The parabolas intersect at the origin O and the point A .



The x-coordinate of the point A is

- A. 1
- B. 3
- C. 4
- D. 5
- E. 8

13. There are 60,000 students sitting a Pacific Regional Mathematics Examination. If the results form a normal distribution, how many students would be expected to score a result between 1 and 2 standard deviations above the mean?

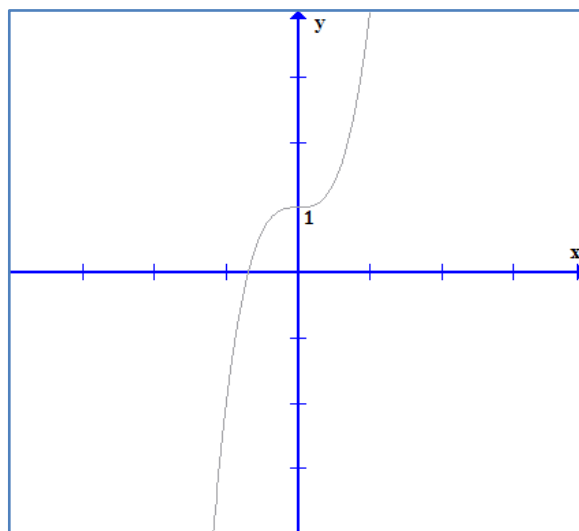
- A. 8,100
- B. 16,200
- C. 20,400
- D. 28,500
- E. 29,910

14. What is the value of

$$\int_1^4 \frac{1}{3x} dx ?$$

- A. $\frac{1}{3} \ln 3$
- B. $\frac{1}{3} \ln 4$
- C. $\ln 9$
- D. $\ln 12$
- E. $\frac{1}{3} \ln 9$

15. The diagram shows the graph of an equation.



Which of the following equations does the graph best represent?

- A. $y = \frac{3}{x} + 1$
- B. $y = 3^x + 1$
- C. $y = 3x^2 + 1$
- D. $y = 3x^3 + 1$
- E. $y = 3x^4 + 1$

16. The tangent to the graph of $y = \sqrt{b - x^2}$ has a gradient of $-\frac{1}{3}$ when $x = 1$. The value of b is

A. $\frac{-10}{9}$

B. $\frac{10}{9}$

C. 4

D. 10

E. 11

17. The weights of bags of flour are normally distributed with mean 252 g and standard deviation 12 g. The manufacturer says that 40% of bags weigh more than x g. The maximum possible value of x is closest to

A. 249.0

B. 251.5

C. 253.5

D. 254.5

E. 255.0

18. Telesia is a badminton player. If she wins a game, the probability that she will win the next game is 0.7. If she loses a game, the probability that she will lose the next game is 0.6. Telesia has just won a game. The probability that she will win exactly one of her next two games is

A. 0.33

B. 0.35

C. 0.42

D. 0.49

E. 0.82

19. The random variable X has a normal distribution with mean 12 and standard deviation 0.5. If Z has the standard normal distribution, then the probability that X is less than 11.5 is equal to

A. $\Pr(Z > -1)$

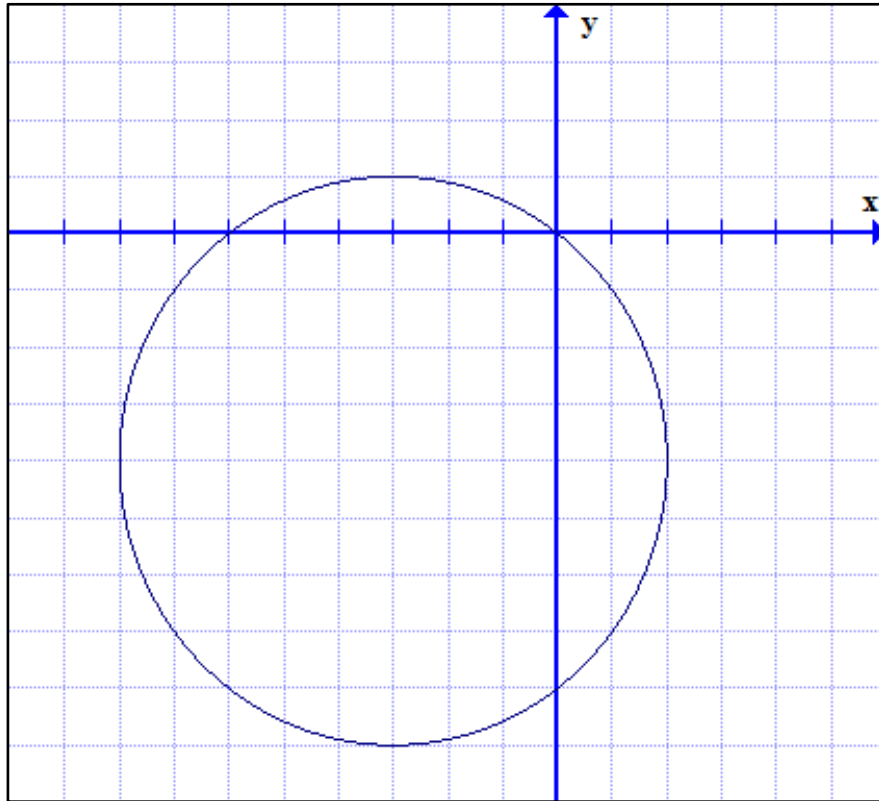
B. $\Pr(Z < -0.5)$

C. $\Pr(Z > 1)$

D. $\Pr(Z \geq 0.5)$

E. $\Pr(Z \geq -1)$

20. What is an equation of the circle shown in the graph below?



- A. $(x - 3)^2 + (y - 4)^2 = 25$
- B. $(x + 3)^2 + (y + 4)^2 = 25$
- C. $(x - 3)^2 + (y - 4)^2 = 10$
- D. $(x + 3)^2 + (y + 4)^2 = 10$
- E. $(x - 3)^2 + (y - 4)^2 = 5$

21. The Mosooi Radio Station has planned programming on the assumption that the mean length of songs $\mu = 4$ minutes. If it is found that 30% of songs last less than 3 minutes, then the standard deviation of length of song is closest to:

A 1.91 minutes

B 0.96 minutes

C 1 minute

D 0.52 minutes

E 1.04 minutes

22. The sum to infinity of a geometric series is 60. If its first term is 80, what is the common ratio?

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $-\frac{1}{3}$

D. $-\frac{1}{2}$

E. $-\frac{7}{3}$

23. The sum of the infinite series

$$\sum_{k=0}^{\infty} 5 \left(\frac{2}{3}\right)^k$$

is

A. 0

B. $\frac{10}{3}$

C. 5

D. 15

E. ∞

24. What is the value of k in the function $f(x) = \frac{3-k}{2x+k}$ if its graph passes through the point (5, -0.35)?

A. $\frac{-47}{6}$

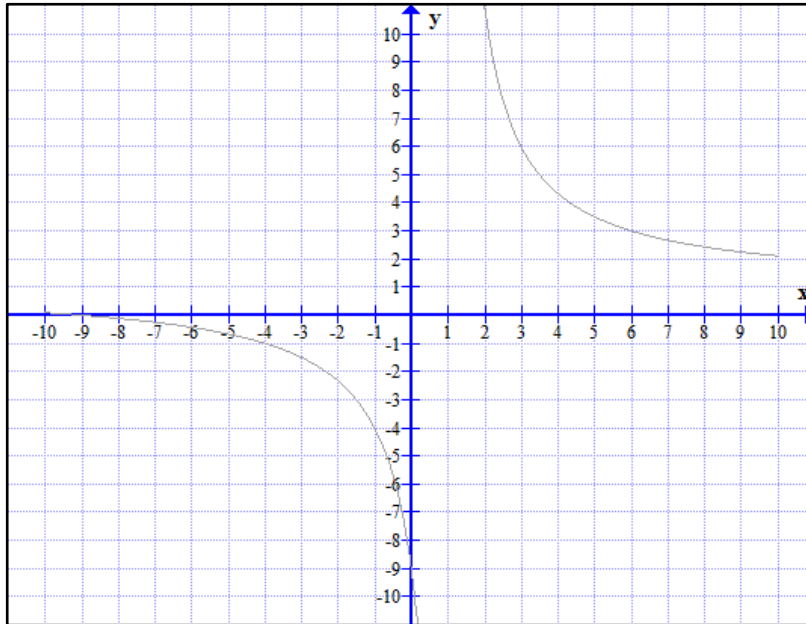
B. 10

C. $\frac{13}{4}$

D. -3.325

E. $\frac{-6.5}{6}$

25. Which is a possible function for this graph?



- A. $f(x) = \frac{x+9}{x-5}$
- B. $f(x) = \frac{7x+9}{x+1}$
- C. $f(x) = \frac{x+9}{x-1}$
- D. $f(x) = \frac{4x+9}{x-1}$
- E. $f(x) = \frac{6x+9}{2x+1}$

26. Sieni's birthday cake is circular and has a 30 cm radius. Her slice creates an arc with a central angle of 120° . What is the area of Sieni's slice of cake in terms of πcm^2 ?

- A. $300\pi\text{ cm}^2$
- B. $10\pi\text{ cm}^2$
- C. $150\pi\text{ cm}^2$
- D. $900\pi\text{ cm}^2$
- E. $3600\pi\text{ cm}^2$

27. The air traffic controller at Malolo Airport needs to determine the distance between two airplanes. The distance from Airplane #1 to the controller is 100 miles. The distance from Airplane #2 to the controller is 125 miles. The angle between the airplanes (using the control centre for the vertex) is 50 degrees. What is the distance between the two airplanes (rounded to the nearest tenth)?

- A. 110.2 miles
- B. 97.8 miles
- C. 98.1 miles
- D. 105.7 miles
- E. 102.3 miles

28. Four of the following five points lie on a circle with its centre at $(-2, 3)$. Which *one* of the following points does not lie on the same circle as the others?

- A. $(5, 1)$
- B. $(-9, 5)$
- C. $(0, -4)$
- D. $(4, -1)$
- E. $(-4, -4)$

29. Let f be a function with domain R such that $f'(5) = 0$ and $f'(x) < 0$ when $x \neq 5$. At $x = 5$, the graph of f has a

- A. local minimum.
- B. local maximum.
- C. gradient of 5.
- D. gradient of -5 .
- E. stationary point of inflection

30. The simplest form of the trigonometric expression:

$$\sec \theta - \frac{1}{\sec \theta}$$

is equal to

A. $1 + \cot \theta$

B. $\sin \theta \tan \theta$

C. $-2 \tan^2 \theta$

D. $\frac{\sin^2 \theta}{\cos \theta}$

E. $\frac{\cos^2 \theta}{\sin \theta}$

SECTION B:

EXTENDED RESPONSES

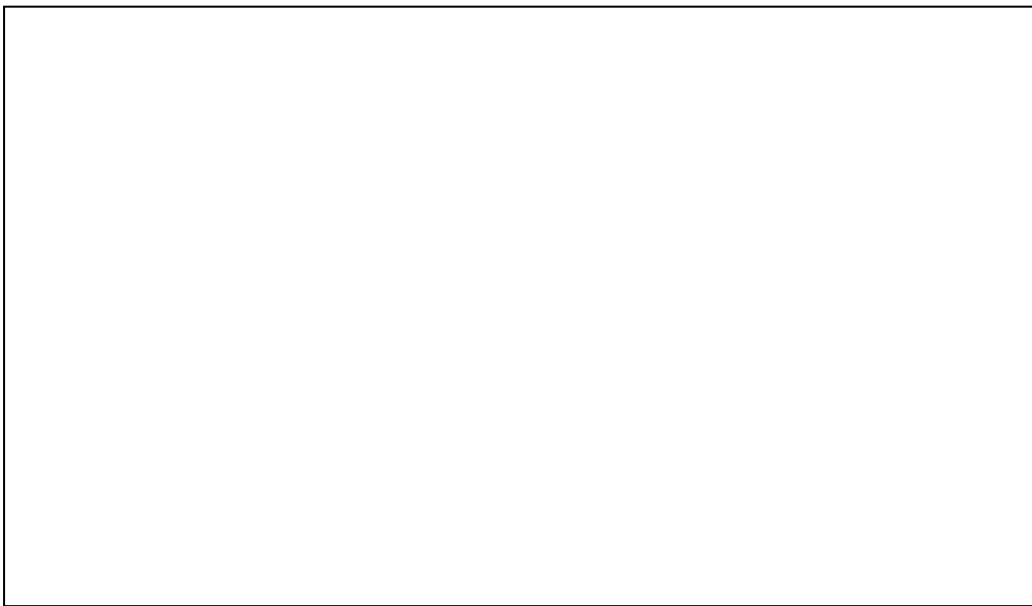
WEIGHTING 70

INSTRUCTIONS: SHOW ALL CALCULATIONS CLEARLY

Question One:

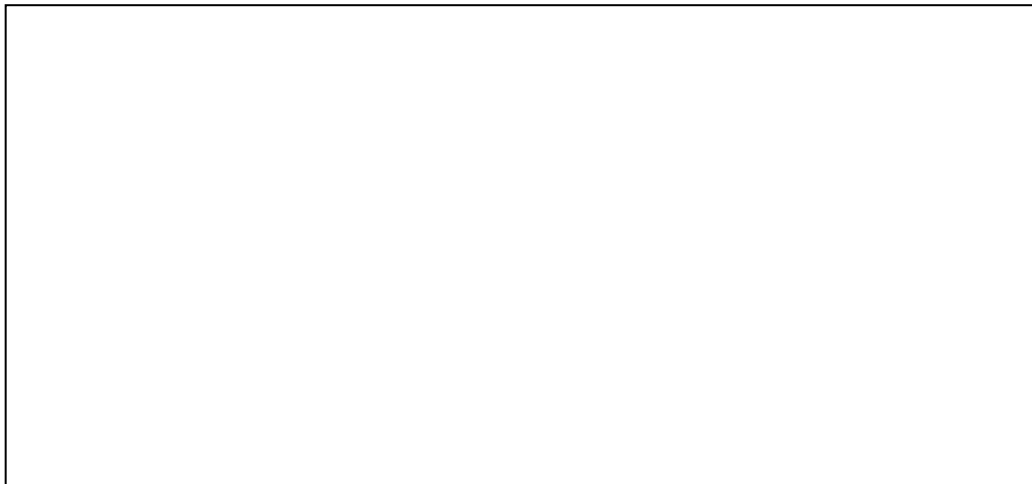
Weighting 10

a. Solve $-4(x - 3) < 7 - 2x$ and graph its solution on a number line.



Skill Level 3	
3	
2	
1	
0	
NR	

b. Find the values of x for the equation $\left(x + \frac{2}{x}\right)^2 - 6\left(x + \frac{2}{x}\right) + 9 = 0$



Skill Level 3	
3	
2	
1	
0	
NR	

c. Solve the equation $2^{3x-3} = 8^{2-x}$ for x .

Skill Level 2	
2	
1	
0	
NR	

d. If x^2 , $4x + 3$, 25 are in geometric sequence, find the values of x .

Skill Level 2	
2	
1	
0	
NR	

Question Two

Weighting10

- a) (i) Rewrite $\sqrt{3} \cos x - \sin x$ in the form $2 \cos(x + \alpha)$ where $0 < \alpha < \frac{\pi}{2}$ and $\cos(A + B) = \cos A \cos B - \sin A \sin B$.

Skill Level 2	
2	
1	
0	
NR	

- (ii) Using your answer in (i) or otherwise, solve $\sqrt{3} \cos x = 1 + \sin x$, where $0 < x < 2\pi$.

Skill Level 2	
2	
1	
0	
NR	

b) Show that $3 \cos \theta - 2 \sin^2 \theta + 1 = 2 \cos^2 \theta + 3 \cos \theta - 1$.

Skill Level 2	
2	
1	
0	
NR	

c) Milk taken out of a refrigerator has a temperature of 2°C . It is placed in a room of constant temperature 23°C . After t minutes the temperature, $T^\circ\text{C}$, of the milk is given by

$$T = A - Be^{-0.03t},$$

where A and B are positive constants.

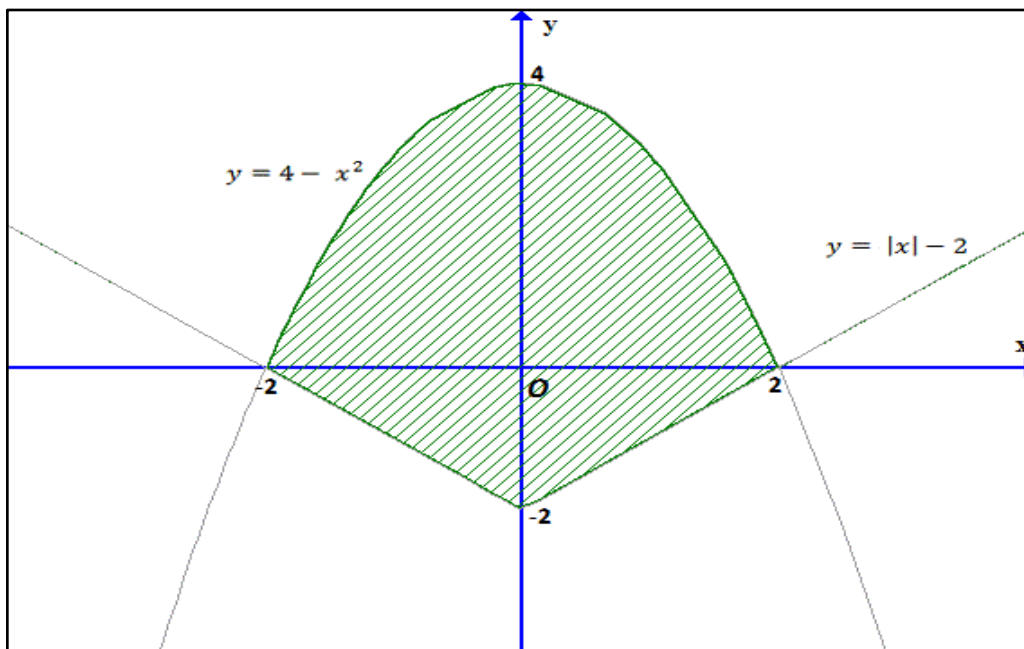
How long does it take for the milk to reach a temperature of 10°C ?

Skill Level 4	
4	
3	
2	
1	
0	
NR	

Question Three

Weighting 10

a) The following diagram shows the graphs of $y = |x| - 2$ and $y = 4 - x^2$.



i. Write the shaded area in terms of definite integrals.

Skill Level 1	
1	
0	
NR	

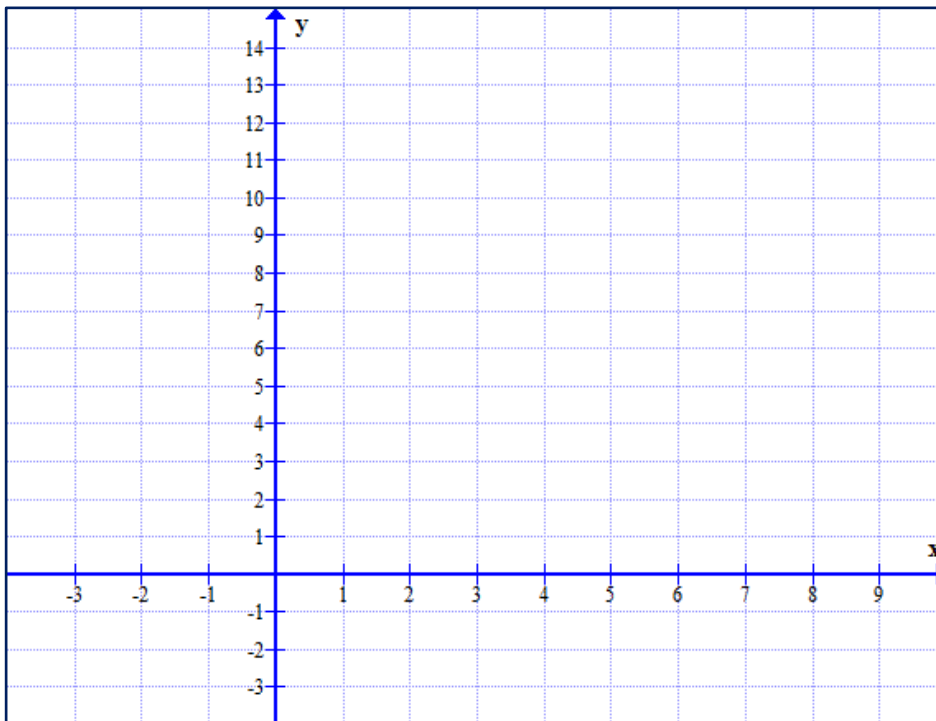
ii. Using your answer in (i) or otherwise, calculate the shaded area.

Skill Level 2	
2	
1	
0	
NR	

- b) i. Use completing the square to write the equation $y = 2x^2 - 4x + 5$ in vertex form $y = a(x - h)^2 + k$ where (h, k) is the vertex or turning point.

Skill Level 1	
1	
0	
NR	

- iii. Sketch the graph of $y = 2x^2 - 4x + 5$ in the x - y plane provided below and label its turning point and y intercept.

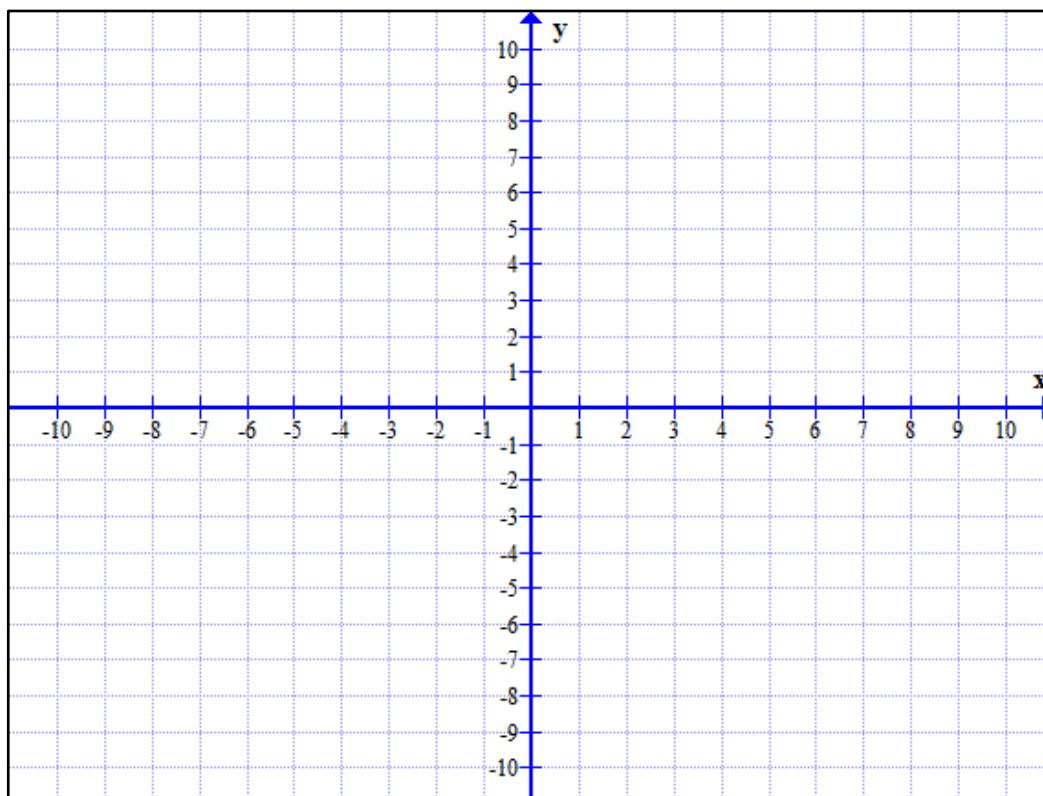


Skill Level 1	
1	
0	
NR	

- c) The graph of a function f has a local maximum at $(a, -3)$ and a local minimum at $(b, -8)$.
- i. Determine the values of c , such that the equation of $f(x) + c = 0$ has exactly one solution. Justify your answer.

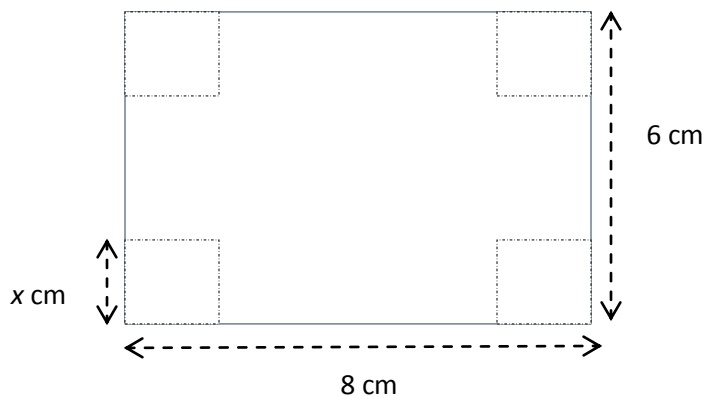
Skill Level 2	
2	
1	
0	
NR	

- ii. Sketch possible graphs of $y = f(x)$ and $y = f(x) + c$ on the same pair of axes below to illustrate your answer in (i).

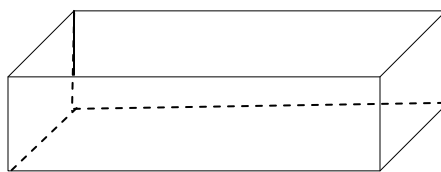


Skill Level 1	
1	
0	
NR	

- d) Toni has a rectangular piece of cardboard that is 8 cm long and 6 cm wide. Toni cuts squares of side length x centimetres from each of the corners of the cardboard, as shown in the diagram below.



Toni turns up the side to form an open box.



Find the value of x (rounded to 1 decimal place) to maximise the volume of the open box.

Skill Level 2	
2	
1	
0	
NR	

Question Four

Weighting 10

- a) The random variable X is normally distributed with mean 100 and standard deviation 4. If $\Pr(X < 106) = q$, find $\Pr(94 < X < 100)$ in terms of q .

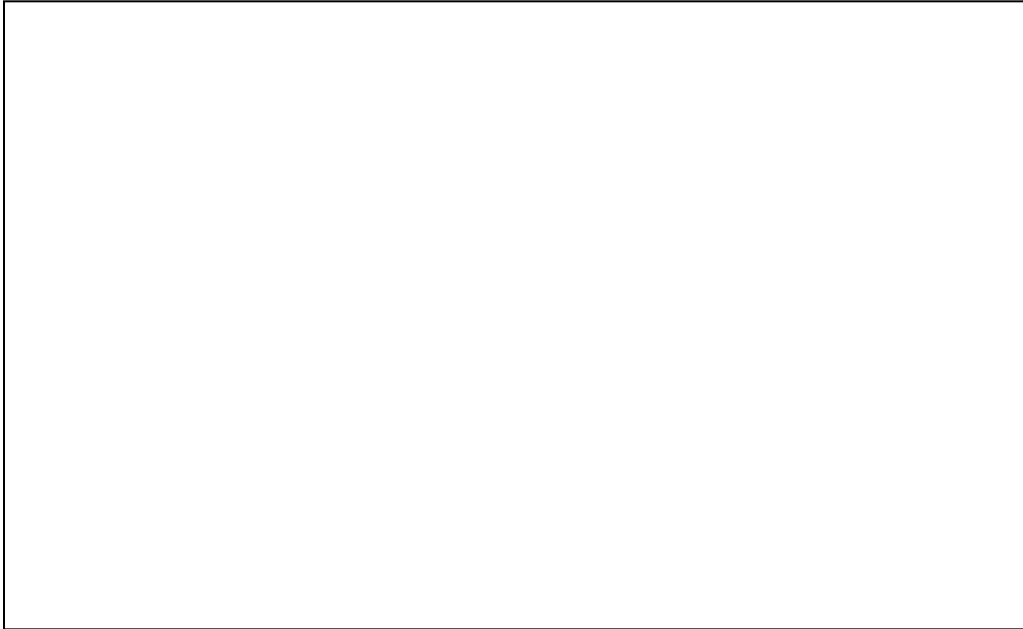
Skill Level 2	
2	
1	
0	
NR	

- b) Thirty thousand students from around the Pacific Rim countries sat an International Mathematics Examination in Year 12 last year and the marks were normally distributed with a mean of 58% and a standard deviation of 10%. To gain a credit pass, a mark of at least 74% (rounded to the nearest whole number) was required.

- i. How many students gained a credit pass?

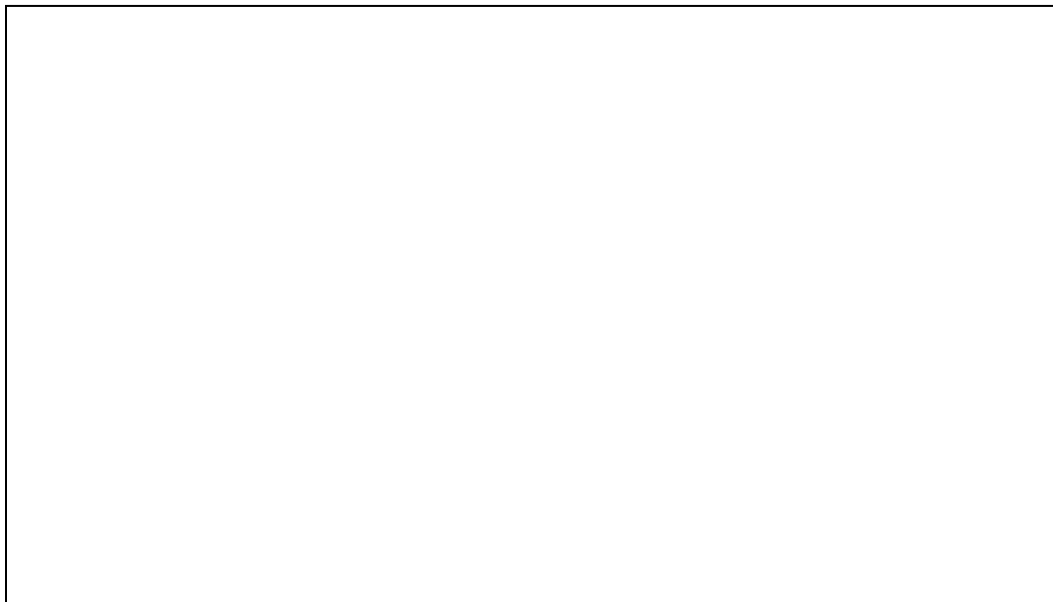
Skill Level 1	
1	
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NR	

ii. If one in five students failed, what was the minimum mark required for a pass?



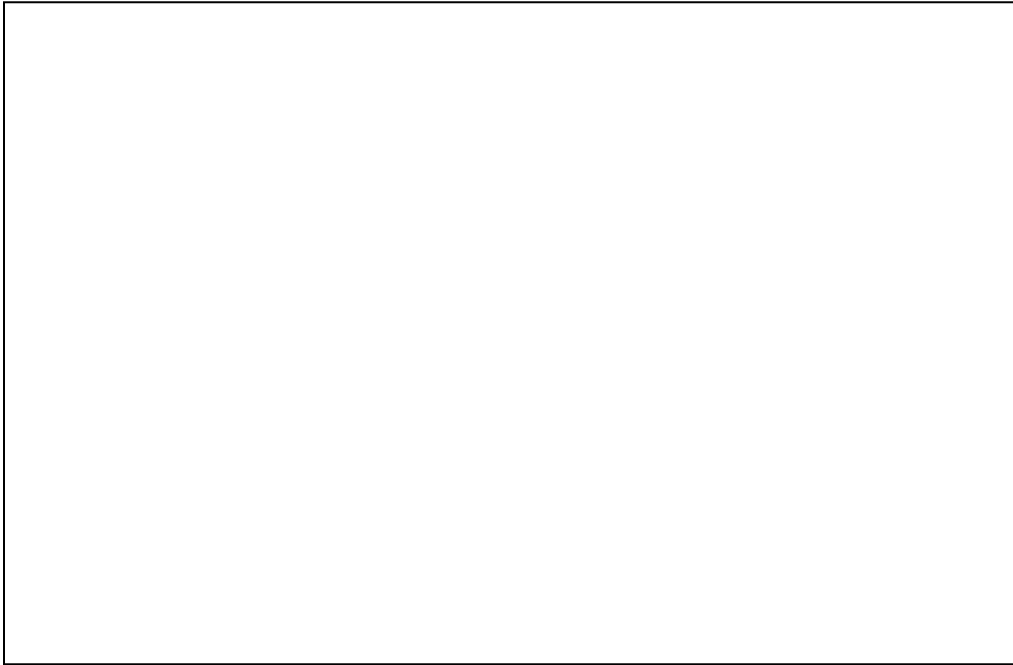
Skill Level 1	
1	
0	
NR	

iii. Find the probability that two students selected at random both passed?



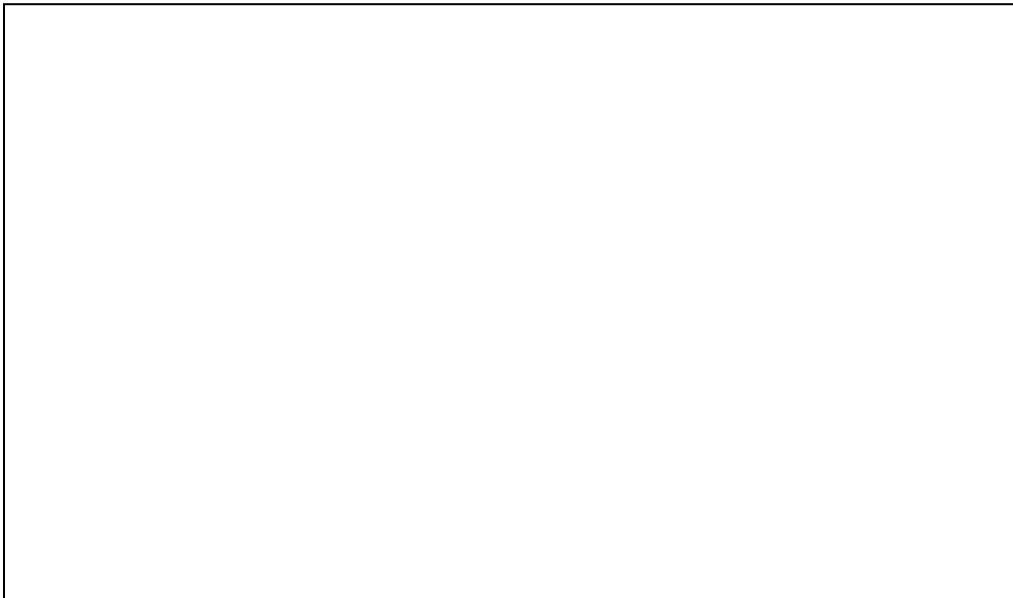
Skill Level 1	
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0	
NR	

- c) i. Find an equation of the line joining $A(7, 4)$ and $B(2, 0)$, giving your answer in the form $ax + by + c = 0$, where a, b and c are integers.



Skill Level 2	
2	
1	
0	
NR	

- ii. Find the length of AB , leaving your answer in surd form.



Skill Level 2	
2	
1	
0	
NR	

- iii. The point C has coordinates $(2, t)$, where $t > 0$, and $AC = AB$. What is the value of t ?



Skill Level 1	
1	
0	
NR	

Question Five

Weighting 10

- a) Show that the series $\log_2 x + \log_4 x + \log_{16} x + \dots$ is geometric and find the sum of the series for infinite terms. [**no calculator**]

Skill Level 3	
3	
2	
1	
0	
NR	

- b) Evaluate

$$\int_0^{\frac{1}{2}} (3x - 1) \cos(\pi x) dx.$$

Skill Level 3	
3	
2	
1	
0	
NR	

- c) The first three terms of geometric series are 18, 12, and p . Find the sum of the first 15 terms of the series, giving your answer to 3 decimal places.

Skill Level 4	
4	
3	
2	
1	
0	
NR	

Question Six

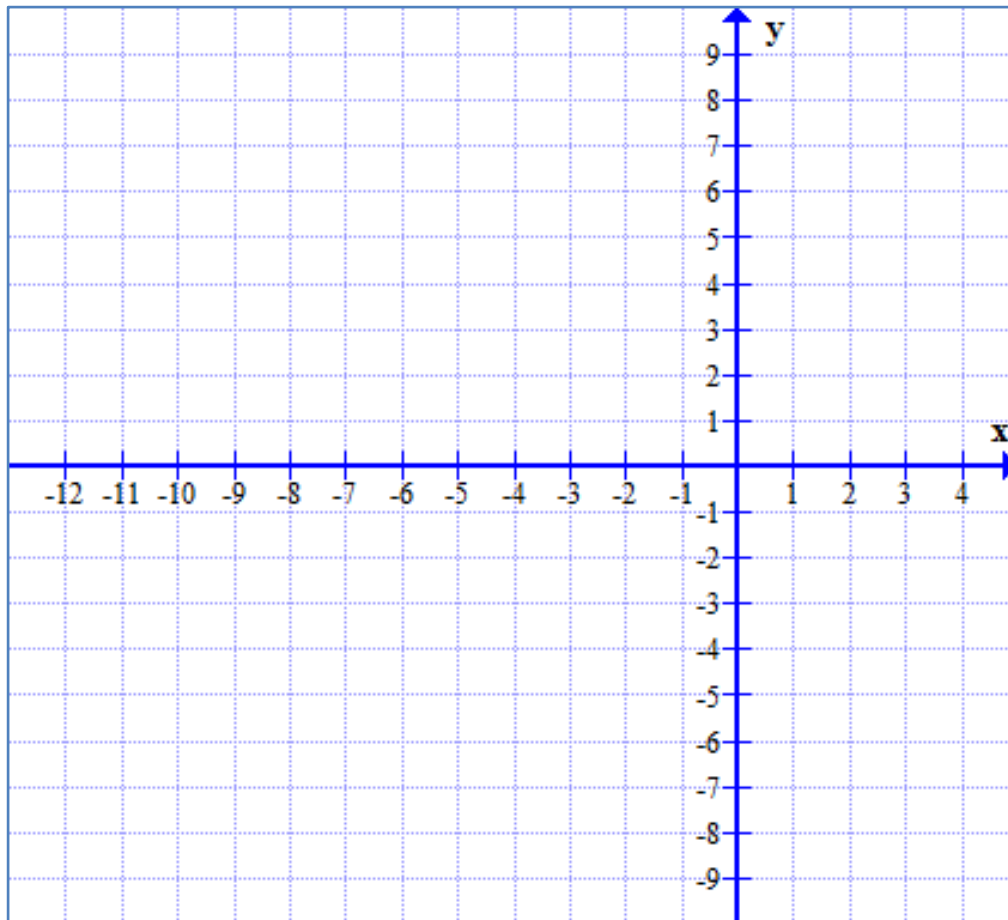
Weighting 10

- i. The circle $(x + 6)^2 + (y - 7)^2 = 4$ is translated 3 units right and 8 units down. Determine the equation of this new circle (i.e. Circle A).



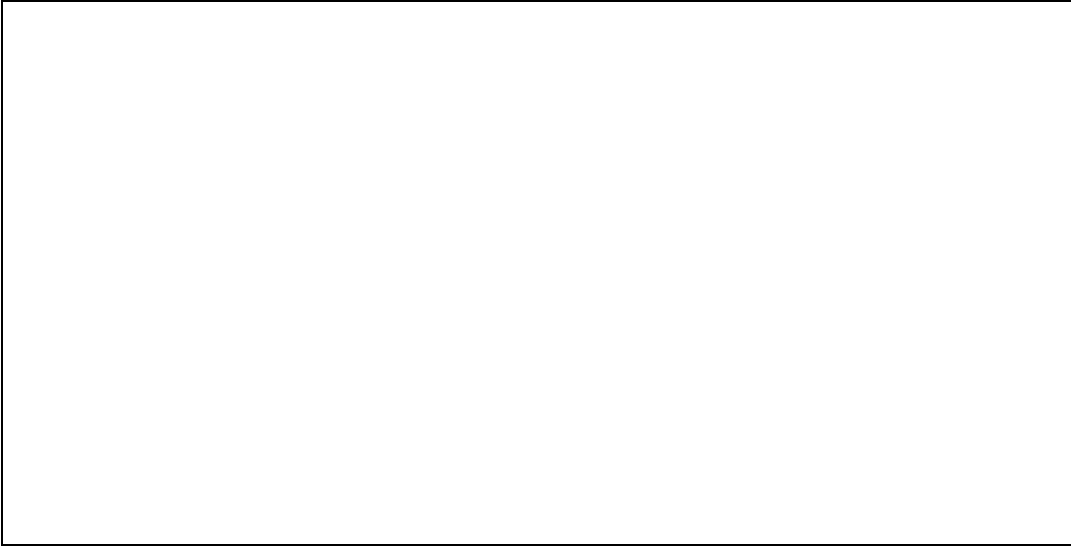
Skill Level 1	
1	
0	
NR	

- ii. Sketch a graph of Circle *A* on the following pair of axes.



Skill Level 1	
1	
0	
NR	

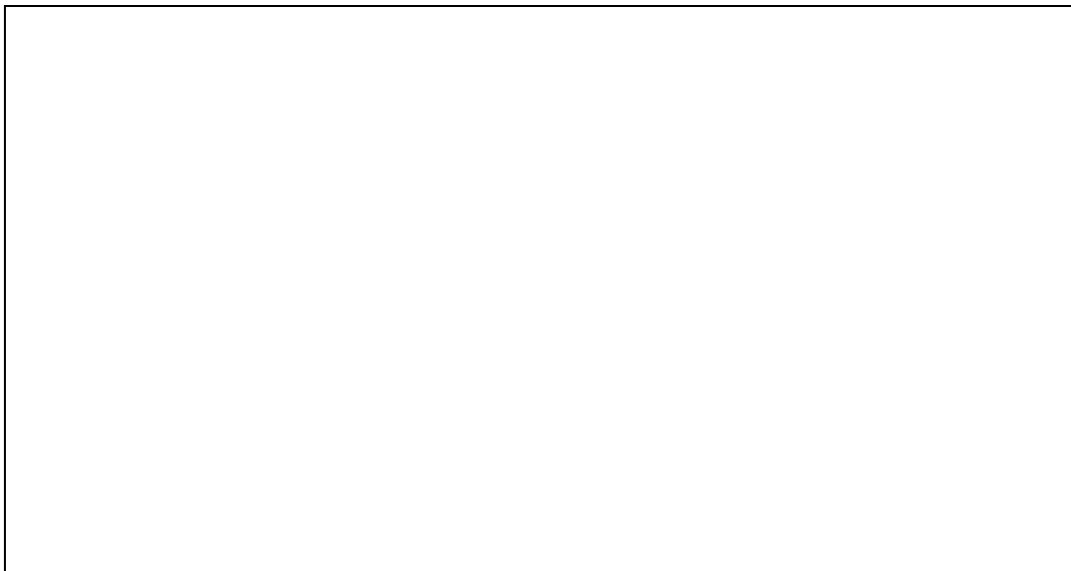
- iii. Determine the transformations that will map the graph of Circle A to the graph of the unit circle: $x^2 + y^2 = 1$.



Skill Level 2	
2	
1	
0	
NR	

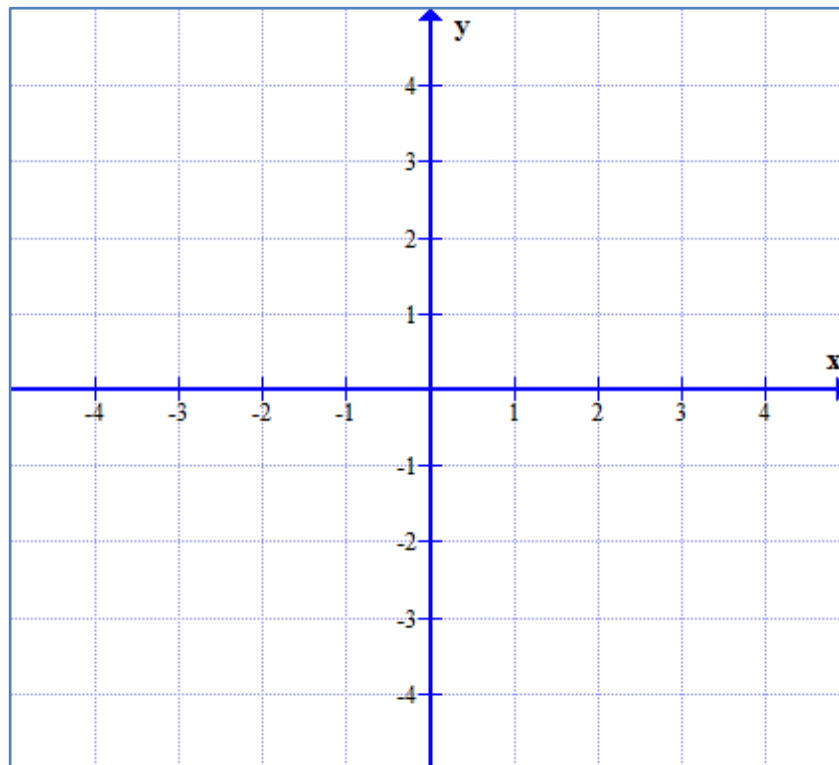
b) Let $f(x) = x^3 - 3x + 2$.

- i. Find the coordinates of the stationary points of $y = f(x)$, and determine their nature.



Skill Level 3	
3	
2	
1	
0	
NR	

- ii. Hence, sketch the graph of $f y = f(x)$ showing all stationary points and the y -intercept.



Skill Level 1	
1	
0	
NR	

- c) Show from first principles that the derivative of $f(x) = 3x^2 - 1$ is $6x$.

Skill Level 2	
2	
1	
0	
NR	

Question Seven

Weighting 10

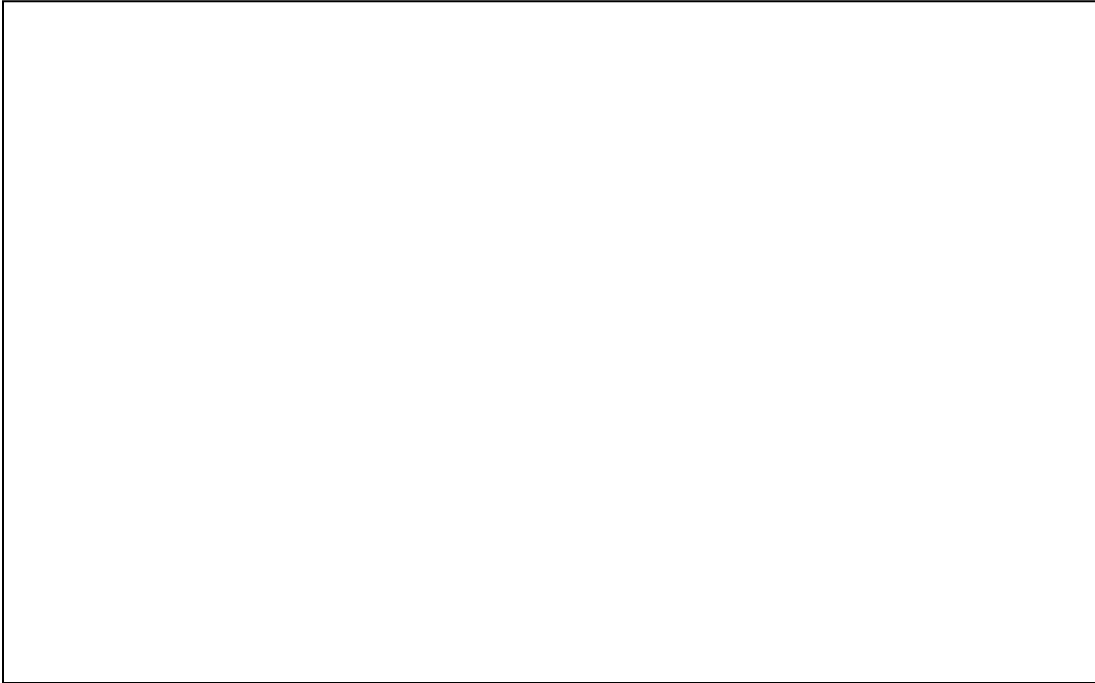
- a) The water height at Laumolo Creek fluctuates according to the tide. At time t hours after midnight, the height of the tide, h metres, is given by

$$h = 1 + 0.6 \sin \frac{2\pi}{13} (t + 0.25)$$

- i. State the amplitude, period, horizontal shift, and vertical shift.

Skill Level 3	
3	
2	
1	
0	
NR	

ii. Find the height of the tide at 6 am.



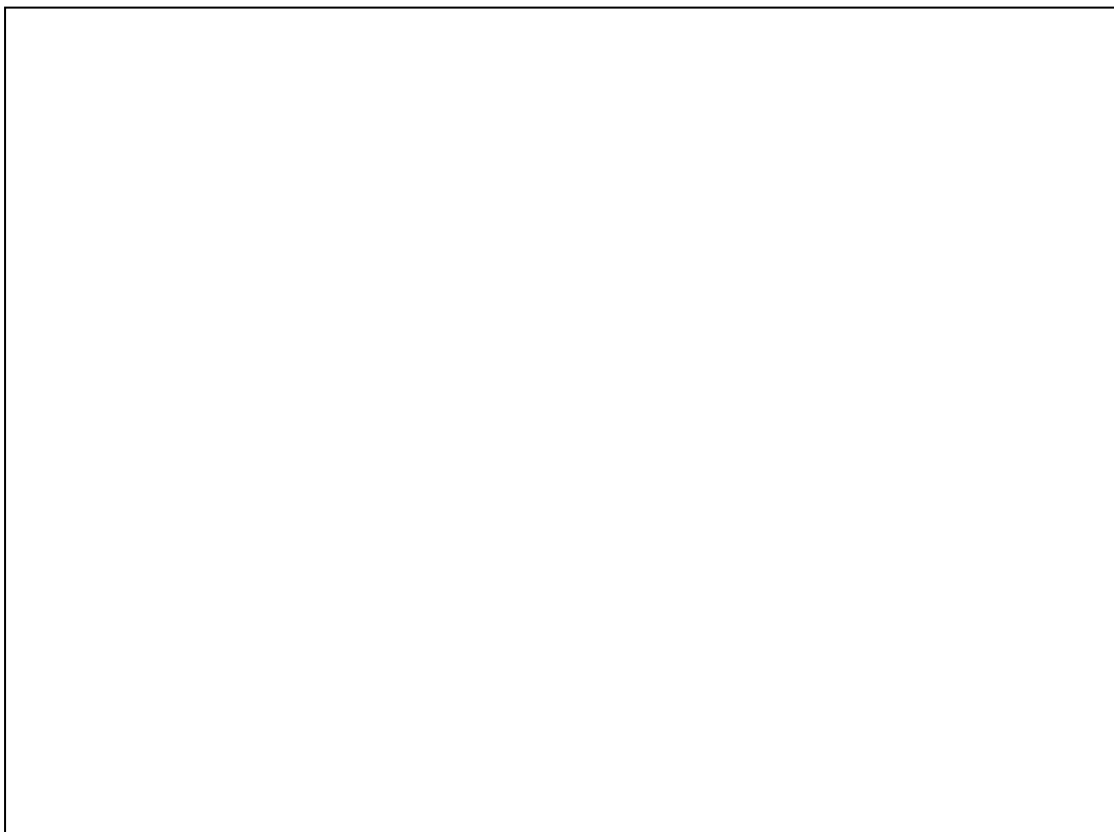
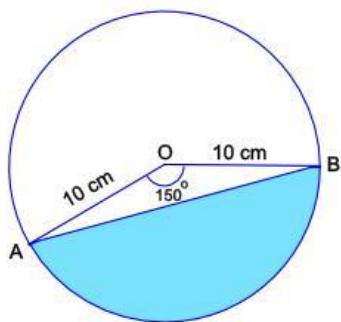
Skill Level 1	
1	
0	
NR	

iii. When is the tide first at a height of 1 metre?



Skill Level 3	
3	
2	
1	
0	
NR	

- b) The diagram below shows a circle with centre O and radius 10 cm. A and B are points on the circumference such that arc AB makes an angle of 150° at O. Calculate the area of the shaded segment. Round your answer to the nearest cm^2 .



Skill Level 3	
3	
2	
1	
0	
NR	

STANDARD INTEGRALS

$$\int x^n dx = \frac{1}{n+1} x^{n+1}, \quad n \neq -1, \quad x \neq 0, \quad \text{if } n < 0$$

$$\int \frac{1}{x} dx = \ln x, \quad x > 0$$

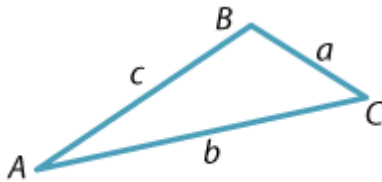
$$\int \cos ax dx = \frac{1}{a} \sin ax, \quad a \neq 0$$

$$\int \sin ax dx = -\frac{1}{a} \cos ax, \quad a \neq 0$$

$$\int v \frac{du}{dx} dx = uv - \int u \frac{dv}{dx} dx$$

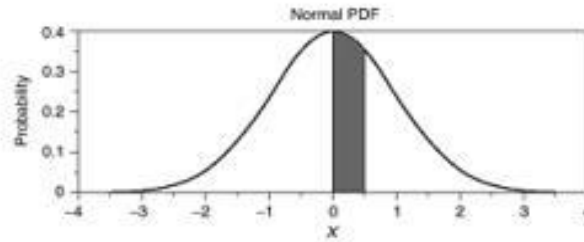
NOTE: $\ln x = \log_e x$, $x > 0$

Some formulas:



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$a^2 = b^2 + c^2 - 2bc \cos A$$



Area under the Normal Curve from 0 to X

X	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.00000	0.00399	0.00798	0.01197	0.01595	0.01994	0.02392	0.02790	0.03188	0.03586
0.1	0.03983	0.04380	0.04776	0.05172	0.05567	0.05962	0.06356	0.06749	0.07142	0.07535
0.2	0.07926	0.08317	0.08706	0.09095	0.09483	0.09871	0.10257	0.10642	0.11026	0.11409
0.3	0.11791	0.12172	0.12552	0.12930	0.13307	0.13683	0.14058	0.14431	0.14803	0.15173
0.4	0.15542	0.15910	0.16276	0.16640	0.17003	0.17364	0.17724	0.18082	0.18439	0.18793
0.5	0.19146	0.19497	0.19847	0.20194	0.20540	0.20884	0.21226	0.21566	0.21904	0.22240
0.6	0.22575	0.22907	0.23237	0.23565	0.23891	0.24215	0.24537	0.24857	0.25175	0.25490
0.7	0.25804	0.26115	0.26424	0.26730	0.27035	0.27337	0.27637	0.27935	0.28230	0.28524
0.8	0.28814	0.29103	0.29389	0.29673	0.29955	0.30234	0.30511	0.30785	0.31057	0.31327
0.9	0.31594	0.31859	0.32121	0.32381	0.32639	0.32894	0.33147	0.33398	0.33646	0.33891
1.0	0.34134	0.34375	0.34614	0.34849	0.35083	0.35314	0.35543	0.35769	0.35993	0.36214
1.1	0.36433	0.36650	0.36864	0.37076	0.37286	0.37493	0.37698	0.37900	0.38100	0.38298
1.2	0.38493	0.38686	0.38877	0.39065	0.39251	0.39435	0.39617	0.39796	0.39973	0.40147
1.3	0.40320	0.40490	0.40658	0.40824	0.40988	0.41149	0.41308	0.41466	0.41621	0.41774
1.4	0.41924	0.42073	0.42220	0.42364	0.42507	0.42647	0.42785	0.42922	0.43056	0.43189
1.5	0.43319	0.43448	0.43574	0.43699	0.43822	0.43943	0.44062	0.44179	0.44295	0.44408
1.6	0.44520	0.44630	0.44738	0.44845	0.44950	0.45053	0.45154	0.45254	0.45352	0.45449
1.7	0.45543	0.45637	0.45728	0.45818	0.45907	0.45994	0.46080	0.46164	0.46246	0.46327
1.8	0.46407	0.46485	0.46562	0.46638	0.46712	0.46784	0.46856	0.46926	0.46995	0.47062
1.9	0.47128	0.47193	0.47257	0.47320	0.47381	0.47441	0.47500	0.47558	0.47615	0.47670
2.0	0.47725	0.47778	0.47831	0.47882	0.47932	0.47982	0.48030	0.48077	0.48124	0.48169
2.1	0.48214	0.48257	0.48300	0.48341	0.48382	0.48422	0.48461	0.48500	0.48537	0.48574
2.2	0.48610	0.48645	0.48679	0.48713	0.48745	0.48778	0.48809	0.48840	0.48870	0.48899
2.3	0.48928	0.48956	0.48983	0.49010	0.49036	0.49061	0.49086	0.49111	0.49134	0.49158
2.4	0.49180	0.49202	0.49224	0.49245	0.49266	0.49286	0.49305	0.49324	0.49343	0.49361
2.5	0.49379	0.49396	0.49413	0.49430	0.49446	0.49461	0.49477	0.49492	0.49506	0.49520
2.6	0.49534	0.49547	0.49560	0.49573	0.49585	0.49598	0.49609	0.49621	0.49632	0.49643
2.7	0.49653	0.49664	0.49674	0.49683	0.49693	0.49702	0.49711	0.49720	0.49728	0.49736
2.8	0.49744	0.49752	0.49760	0.49767	0.49774	0.49781	0.49788	0.49795	0.49801	0.49807
2.9	0.49813	0.49819	0.49825	0.49831	0.49836	0.49841	0.49846	0.49851	0.49856	0.49861
3.0	0.49865	0.49869	0.49874	0.49878	0.49882	0.49886	0.49889	0.49893	0.49896	0.49900
3.1	0.49903	0.49906	0.49910	0.49913	0.49916	0.49918	0.49921	0.49924	0.49926	0.49929
3.2	0.49931	0.49934	0.49936	0.49938	0.49940	0.49942	0.49944	0.49946	0.49948	0.49950
3.3	0.49952	0.49953	0.49955	0.49957	0.49958	0.49960	0.49961	0.49962	0.49964	0.49965
3.4	0.49966	0.49968	0.49969	0.49970	0.49971	0.49972	0.49973	0.49974	0.49975	0.49976
3.5	0.49977	0.49978	0.49978	0.49979	0.49980	0.49981	0.49981	0.49982	0.49983	0.49983
3.6	0.49984	0.49985	0.49985	0.49986	0.49986	0.49987	0.49987	0.49988	0.49988	0.49989
3.7	0.49989	0.49990	0.49990	0.49990	0.49991	0.49991	0.49992	0.49992	0.49992	0.49992
3.8	0.49993	0.49993	0.49993	0.49994	0.49994	0.49994	0.49994	0.49995	0.49995	0.49995
3.9	0.49995	0.49995	0.49996	0.49996	0.49996	0.49996	0.49996	0.49996	0.49997	0.49997
4.0	0.49997	0.49997	0.49997	0.49997	0.49997	0.49997	0.49998	0.49998	0.49998	0.49998

Marker Code			

Student Education Number									

SECTION A

MULTIPLE CHOICE (WEIGHTING 30)

1.		11.		21.	
2.		12.		22.	
3.		13.		23.	
4.		14.		24.	
5.		15.		25.	
6.		16.		26.	
7.		17.		27.	
8.		18.		28.	
9.		19.		29.	
10.		20.		30.	

SECTION B

(Markers Only)

M/C	30
Q1	10
Q2	10
Q3	10
Q4	10
Q5	10
Q6	10
Q7	10
Total	100