Year 10 Mathematics

5.3 Pathway

YEARLY ASSESSMENT

Term 4

2021

Time Allowed: 60 minutes

General Instructions

- 5 minutes reading time
- Answer all questions using the Multiple Choice Answer Sheet.
- Approved calculators may be used.
- Use black or blue pen.

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Marks	……../**45**

Answer all questions using the Multiple Choice Answer Sheet

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1 Which of the following lines is parallel to the line $y = -2x + 5$?

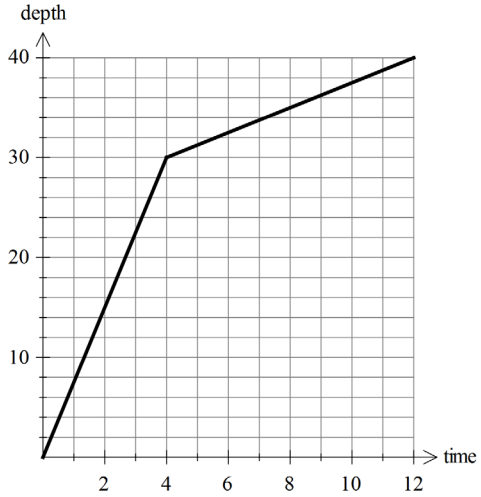
(A) $y = 2x - 5$

(B) $y = -2x - 5$

(C) $y = \frac{1}{2}x + 5$

(D) $y = -\frac{1}{2}x + 5$

2 Water is being poured at a constant rate into a bottle. The graph showing the depth (d) of water in the bottle over time (t) is shown.



Which bottle below might have been filled to produce the graph above?

(A) (B) (C) (D)



3 Which of the following is the value of the simple interest earned on \$850 for 9 months at 8% p.a.?

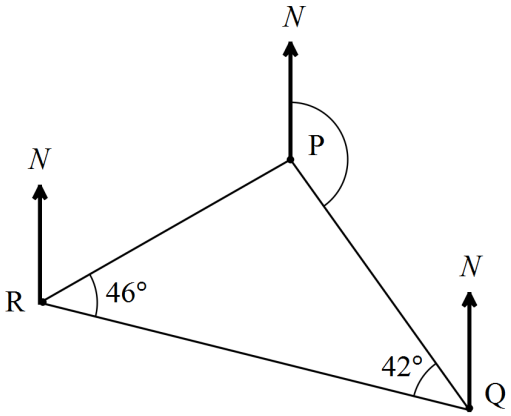
(A) \$51

(B) \$612

(C) \$510

(D) \$6120

4 The diagram shows three towns P, Q, and R. $\angle PRQ = 46°$ and $\angle RQP = 42°$.
The bearing from P to Q is 160°.
What is the bearing of R from P?



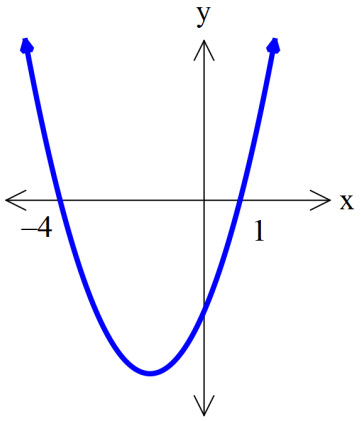
(A) 072°

(B) 206°

(C) 248°

(D) 252°

5 Which of the following could describe the graph shown?



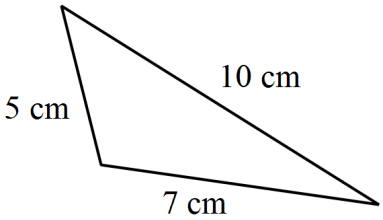
(A) $y = (x-4)(x-1)$

(B) $y = (x+4)(x+1)$

(C) $y = (x+4)(x-1)$

(D) $y = (x-4)(x+1)$

6 Which of the following would be used to determine the size of the largest angle?



(A) $\cos\theta = \dfrac{5^2+10^2-7^2}{2\times5\times10}$

(B) $\cos\theta = \dfrac{5^2+7^2-10^2}{2\times5\times7}$

(C) $\cos\theta = \dfrac{7^2+10^2-5^2}{2\times7\times10}$

(D) $\cos\theta = \dfrac{5^2+7^2-10^2}{2\times5\times10}$

7 What is the solution to the equation $2x^3+128=0$?

(A) -8

(B) -4

(C) 4

(D) 8

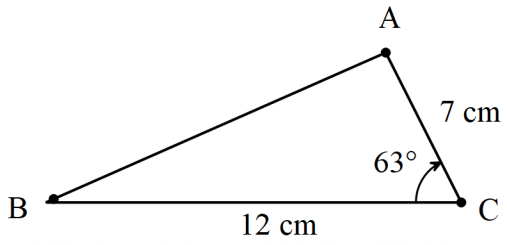
8 Which of the following is used to calculate the area of triangle ABC?

(A) $42\cos 63°$

(B) $84\cos 63°$

(C) $42\sin 63°$

(D) $84\sin 63°$



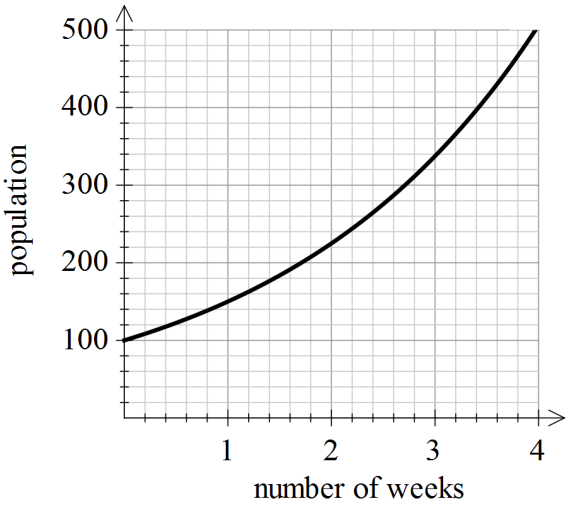
9 The graph below shows the number of rabbits in a colony.
During which week will the population of the colony double its original size?

(A) 1st week

(B) 2nd week

(C) 3rd week

(D) 4th week



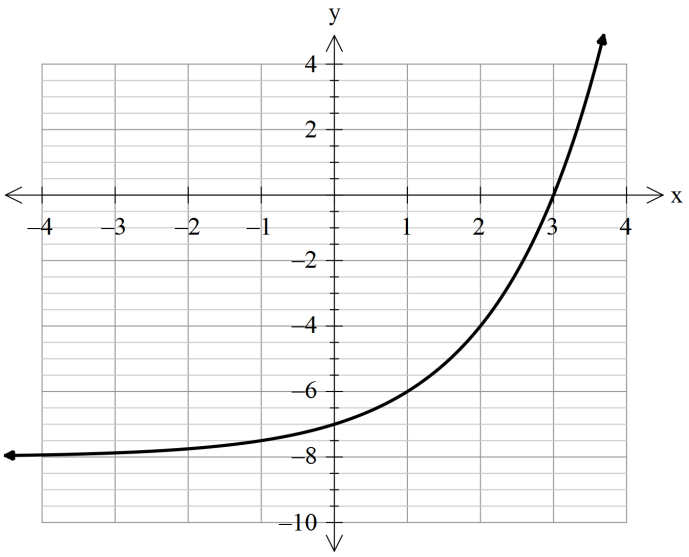
10 Which of the following could describe the graph shown?

(A) $y = 2^x - 7$

(B) $y = 2^x - 8$

(C) $y = -7 - 2^x$

(D) $y = 8 - 2^x$



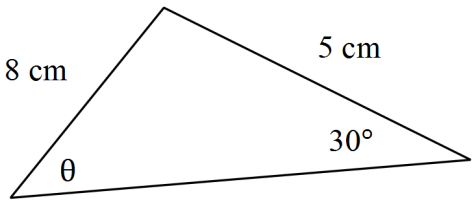
11 What is the value of sin θ?

(A) $\frac{5}{16}$

(B) $\frac{4}{5}$

(C) $\frac{5}{8}$

(D) $\frac{5}{4}$



12 The solution to a pair of simultaneous equations is shown below.

In which line does the first mistake occur?

$3x + y = 20$ ..... ①

$5x - 2y = 26$ ..... ②

$6x + 2y = 40$ ..... ③ ① × 2 ..... Line 1

$11x = 66$ ..... ④ ② + ③ ..... Line 2

$x = 6$ ..... ⑤ ..... Line 3

$30 + y = 20$ Sub ⑤ in ① ..... Line 4

$y = -10$

Solution $(6, -10)$

(A) Line 1

(B) Line 2

(C) Line 3

(D) Line 4

13 What is the future value of $3500 invested at 5% p.a. interest compounding annually for 5 years?

(A) $4256

(B) $4466

(C) $4690

(D) $4920

14 What is the annual simple interest rate when $561 interest is earned on $2200 over 3 years?

(A) $561

(B) 8.5%

(C) 25.5%

(D) 5.61%

15 What is the value of y, if the gradient of the line passing through the points $(-3,5)$ and $(2,y)$ is -1?

(A) 3

(B) 0

(C) -1

(D) -3

16 Which of the following are solutions to $6a^2+17a-3=0$?

(A) $a=-3$ and $a=\frac{1}{6}$

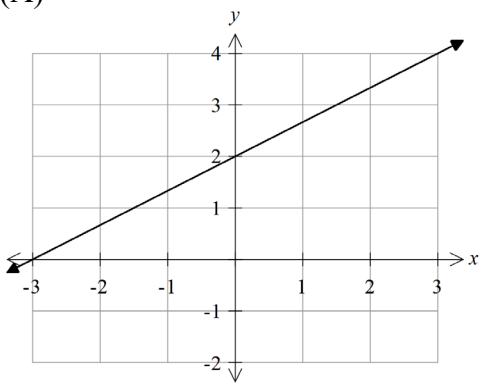
(B) $a=\frac{-1}{6}$ and $a=3$

(C) $a=3$ and $a=2\frac{5}{6}$

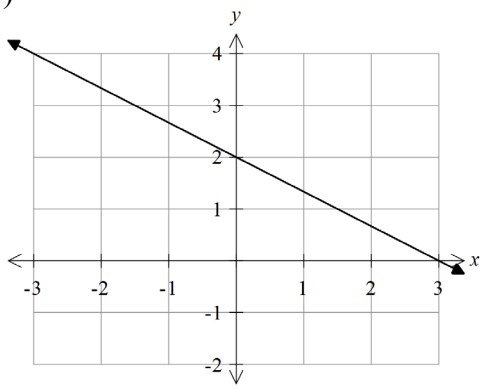
(D) $a=6$ and $a=12$

17 Which graph represents the equation $y=\frac{2}{3}x+2$?

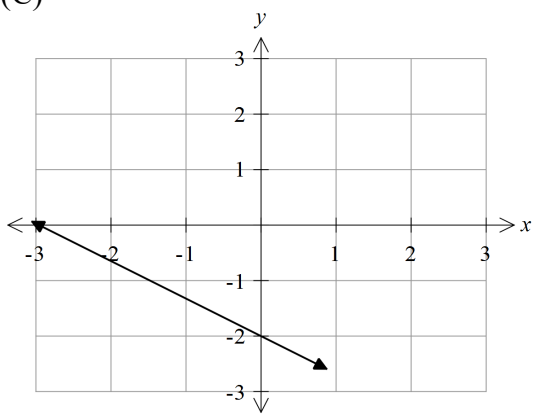
(A)



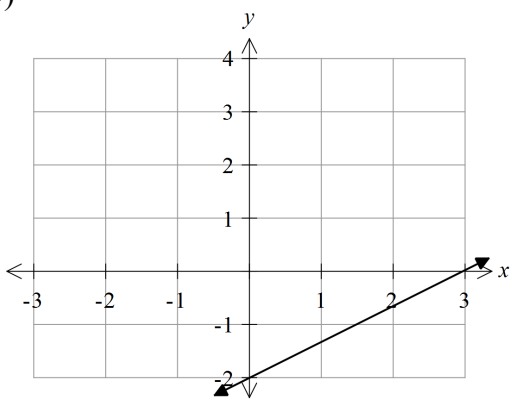
(B)



(C)



(D)



18 Roula paid $37 250 for a new van for her courier service and depreciated it at 28%p.a. What was the depreciated value of the van after two years?

(A) $16 390

(B) $17 939.60

(C) $19 310.40

(D) $20 860

19 y is directly proportional to x, and $y = 450$ when $x = 15$. What is the rule relating x and y?

(A) $y = 0.0333x$

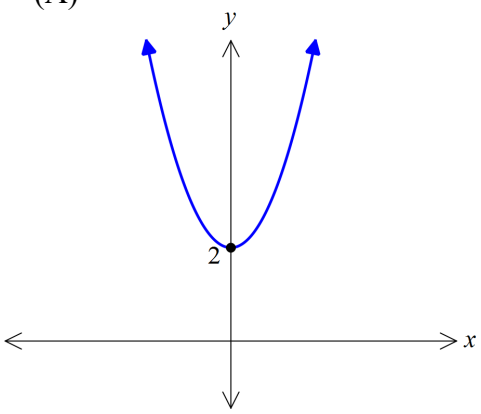
(B) $y = 30x$

(C) $y = 60x$

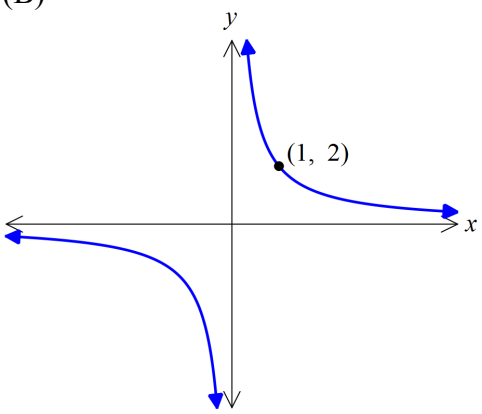
(D) $y = 6750x$

20 Which of the following graphs shows $y = \frac{2}{x}$?

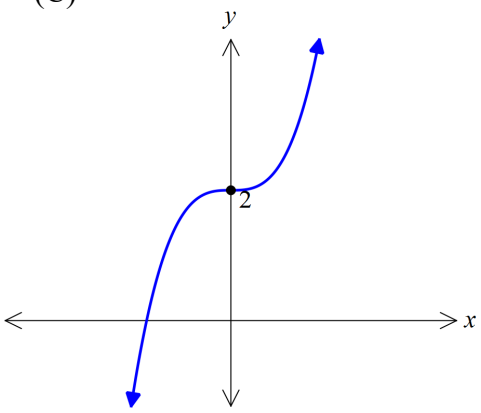
(A)



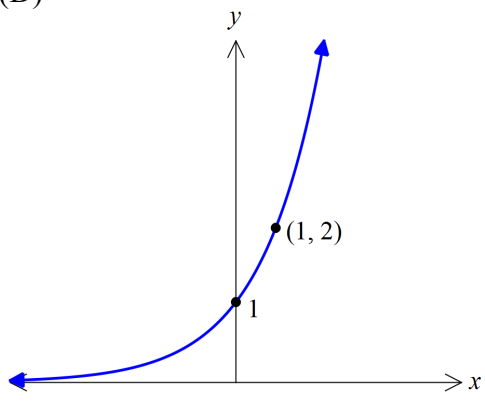
(B)



(C)



(D)



21 What is the solution to the pair of simultaneous equations

$$5x + 7y - 3 = 0 \text{ and } y = 7 - 4x?$$

(A) $x = -2,\ y = -1$

(B) $x = 2,\ y = -1$

(C) $x = -1,\ y = 2$

(D) $x = 1,\ y = 3$

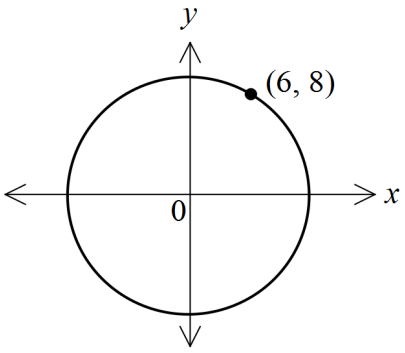
22 What is the equation of this circle?

(A) $x^2 + y^2 = 28$

(B) $x^2 + y^2 = 36$

(C) $x^2 + y^2 = 64$

(D) $x^2 + y^2 = 100$



23 Two lines have equations $y = 5x - 7$ and $y = -5x - 7$.
Which of the following sentences is **not** true?

(A) Both lines have a y-intercept of -7.

(B) The lines have a point of intersection at $(0, -7)$.

(C) The lines have different gradients.

(D) The lines have the same gradient.

24 Which translations are required to change $y = x^2$ into $y = (x-3)^2 + 2$?

(A) left 3, up 2

(B) left 3, down 2

(C) right 3, down 2

(D) right 3, up 2

25 Which of the following is an exact solution to the equation $x^2 + 2x - 5 = 0$?

(A) $-1+\sqrt{24}$

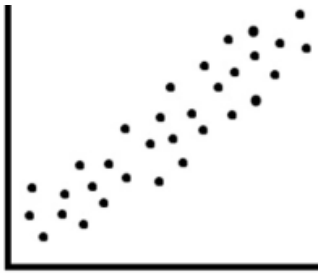
(B) $-1+\sqrt{6}$

(C) $\dfrac{2+\sqrt{-16}}{2}$

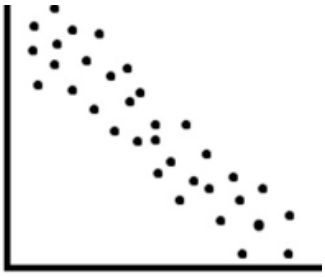
(D) $\dfrac{2+\sqrt{24}}{2}$

26 Which of the following scatterplots show a strong negative correlation?

(A)



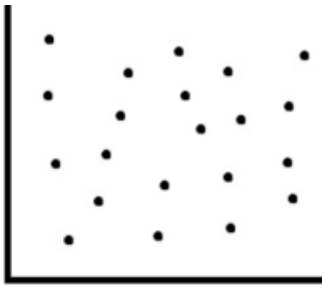
(B)



(C)



(D)



27 Which of the following statements is false?

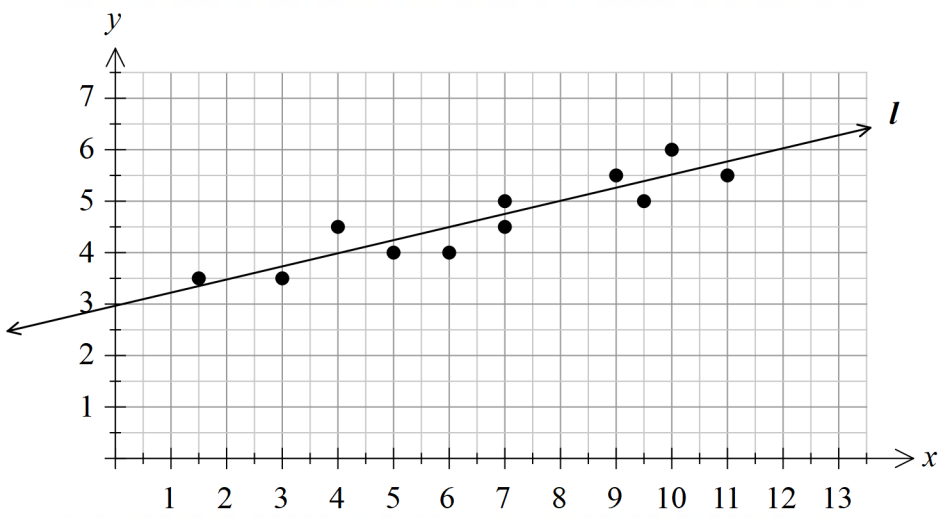
(A) A line of best fit often has roughly the same number of points above and below it.

(B) To find the gradient of the line of best fit, we must choose two of the points from the given data.

(C) The line of best fit can be used for predictions.

(D) The line of best fit does not necessarily have to go through the origin.

28



A line of best fit, ***l***, is drawn through the points as shown.

What is the correct equation for line ***l*** ?

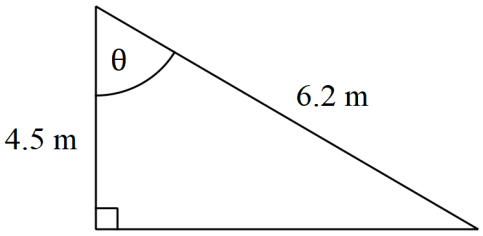
(A) $y = \frac{x}{4} + 3$

(B) $y = \frac{x}{4} - 3$

(C) $y = 4x - 12$

(D) $y = 4x + 3$

29 The size of angle θ in this diagram (correct to the nearest minute) is equal to which of the given answers?



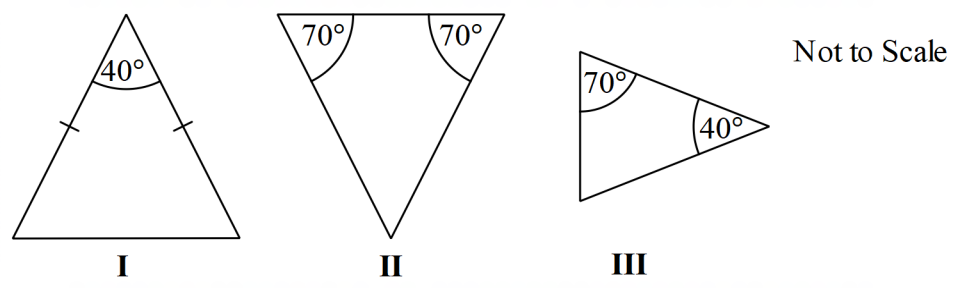
(A) 43°27'

(B) 43°28'

(C) 46°32'

(D) 46°33'

30 Which of the following statements is true?



(A) Only triangles I and II are similar?

(B) Only triangles II and III are similar?

(C) All three triangles are similar?

(D) None of the triangles are similar?

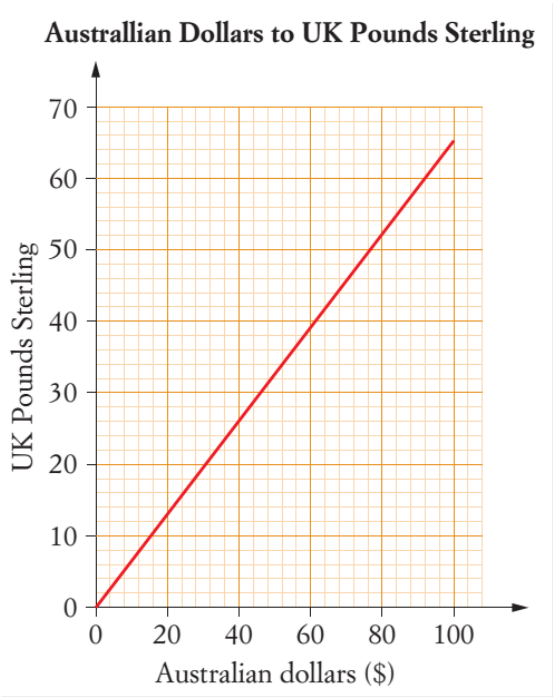
31 Based on the conversion graph below, what is $A60worth in UK pounds?

(A) 35 pounds

(B) 39 pounds

(C) 86 pounds

(D) 88 pounds



32 Which of the following is an example of inverse proportion?

(A) Amount of petrol in the car and the distance the car can travel safely before refuelling.

(B) Amount of groceries bought and total price of groceries.

(C) Number of hours worked and daily wage.

(D) A car's average speed and the time it takes to reach a destination.

33 What is the equivalent rate of \$10/kg in cents in cents/gram?

(A) 1 cent/gram

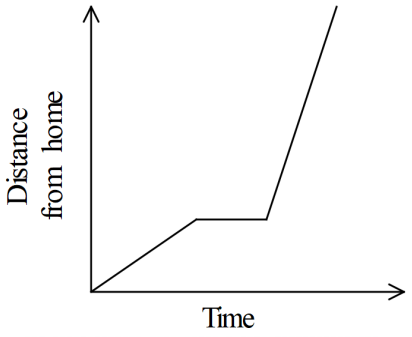
(B) 10 cents/gram

(C) 100 cents/gram

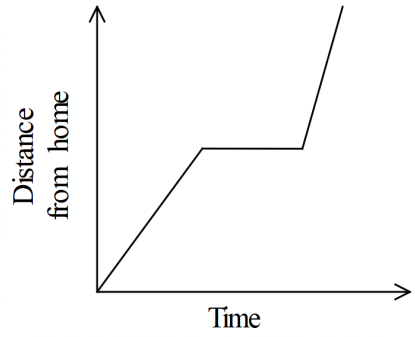
(D) 1000 cents/gram

34 When Sam is travelling from home to school he walks halfway then takes a short break. His friend drives past and offers him a lift so he is driven the rest of the distance to school. Which graph best represents Sam's journey?

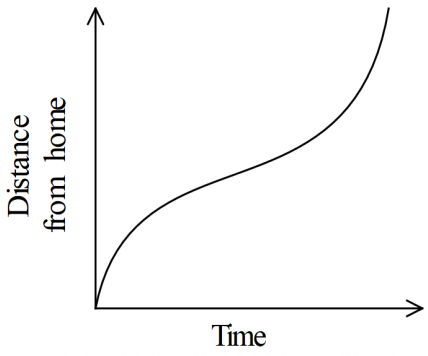
(A)



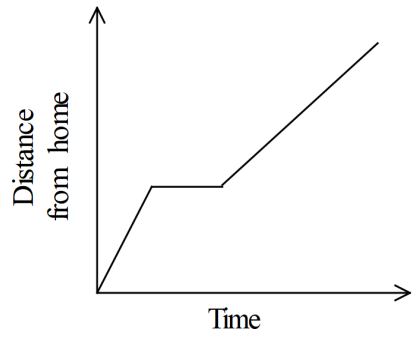
(B)



(C)



(D)



35 Two similar triangles have <u>areas</u> in the ratio 4 : 9. If one side of the smaller triangle is 12 cm long, what is the length of the matching side in the larger triangle?

(A) 18 cm

(B) 27 cm

(C) 108 cm

(D) 729 cm

36 The cash price for a computer is \$1990. The computer could be bought on terms for 20% deposit and \$36 per week for one year.

What is the saving if it is bought for cash?

(A) \$118

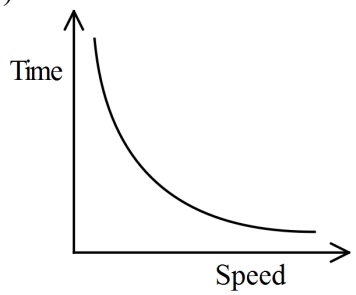
(B) \$280

(C) \$398

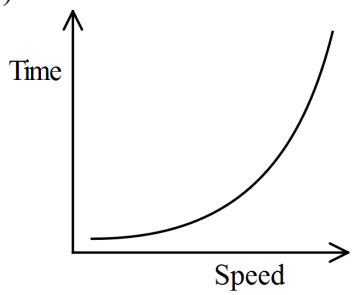
(D) \$1872

37 The time for a car to travel a certain distance varies inversely with its speed.
Which of the following graphs shows this relationship?

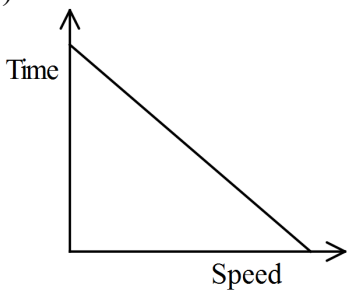
(A)



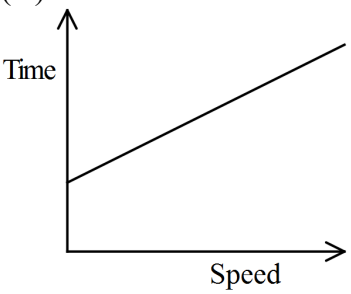
(B)



(C)



(D)



38 A sum of \$7000 is invested for 3 years at the rate of 5.75% p.a., compounded quarterly.
The interest paid on this investment, to the nearest dollar, is which of the following?

(A) \$1208

(B) \$1308

(C) \$8208

(D) \$8308

39 When solving $5x-3y=8$ and $2x+y=4$ by elimination, the first line after eliminating y would be which of the following?

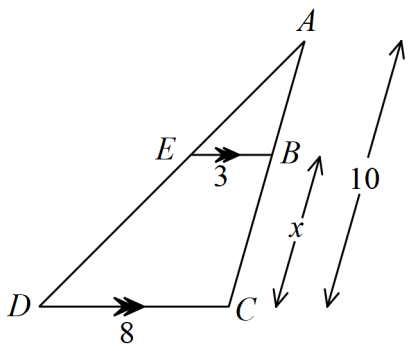
(A) $7x-2y=12$

(B) $7x=12$

(C) $x=4$

(D) $11x=20$

40 Which of the following gives the Similarity Test that proves ΔABE is similar to ΔACD and the correct value of x?



(A) Equiangular; $x=3.75$

(B) Equiangular; $x=6.25$

(C) Two pairs of corresponding sides in the same ratio and included angle equal; $x=3.75$

(D) Two pairs of corresponding sides in the same ratio and included angle equal; $x=6.25$

41 Ming invests \$10 000 for 5 years, compounding monthly, resulting in a final amount of \$12 250.
Which one of the following is the percentage interest rate per compounding term?

(A) 0.137%

(B) 0.339%

(C) 1.71%

(D) 3.39%

42 What is the amount that must be invested at 4.8% p.a. interest compounding monthly to have \$4500 at the end of 3 years?

(A) \$3897.61

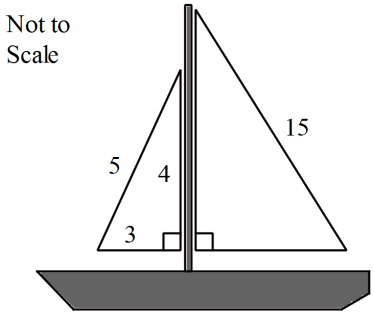
(B) 3909.57

(C) \$832.16

(D) \$3899.84

43 A model yacht has two triangular sails. These triangles are similar to each other. Some dimensions of the sails, in centimetres, are shown on the diagram.

What is the total area of both sails?



(A) 24 cm^2

(B) 27 cm^2

(C) 60 cm^2

(D) 97 cm^2

44 The diagram shows a 3 metre tall tree which casts a shadow of 2.7 metres and a lighthouse which casts a shadow of 54 metres at the same time of the day.

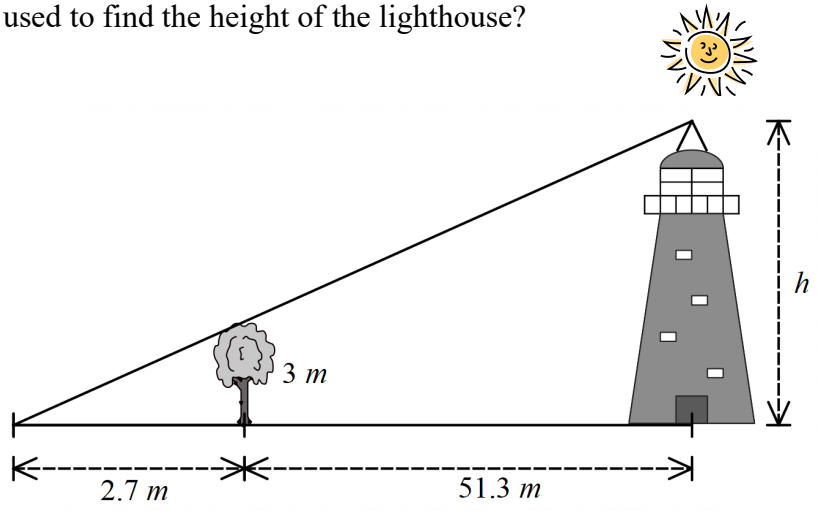
Which equation can be used to find the height of the lighthouse?

(A) $\frac{h}{3}=\frac{2.7}{51.3}$

(B) $\frac{h}{3}=\frac{51.3}{2.7}$

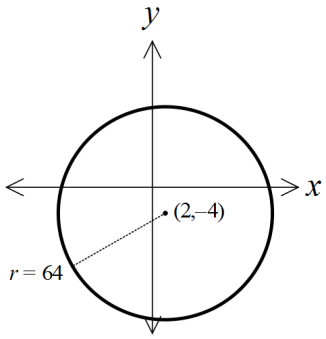
(C) $\frac{h}{3}=\frac{2.7}{54}$

(D) $\frac{h}{3}=\frac{54}{2.7}$

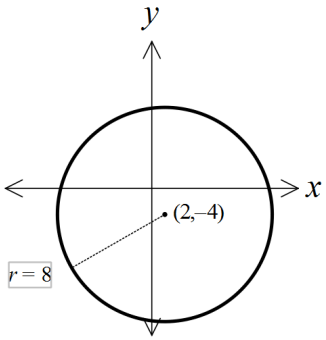


45 Which graph would represent $x^2 - 4x + y^2 + 8y = 44$?

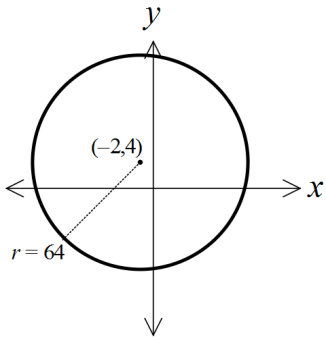
(A)



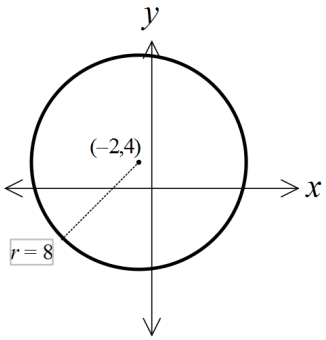
(B)



(C)



(D)



End of Assessment

Answer all questions using the Multiple Choice Answer Sheet

1 Which of the following lines is parallel to the line $y = -2x + 5$?

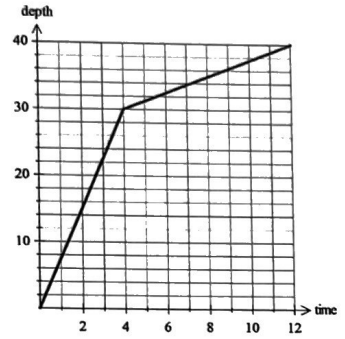
(A) $y = 2x - 5$

(B) $y = -2x - 5$

(C) $y = \frac{1}{2}x + 5$

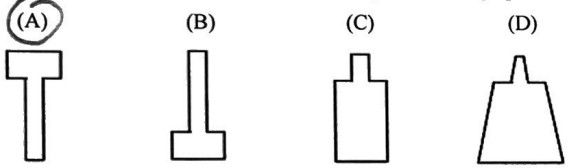
(D) $y = -\frac{1}{2}x + 5$

2 Water is being poured at a constant rate into a bottle. The graph showing the depth (d) of water in the bottle over time (t) is shown.



Which bottle below might have been filled to produce the graph above?

(A) (B) (C) (D)



3 Which of the following is the value of the simple interest earned on \$850 for 9 months at 8% p.a.?

(A) \$51

(B) \$612

(C) \$510

(D) \$6120

$I = 850 \times 0.08 \times \frac{9}{12}$

$= 51$

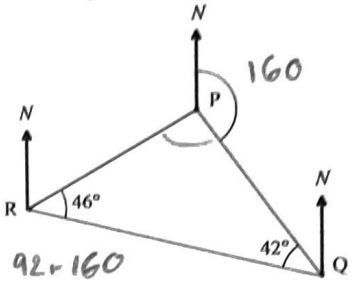
4 The diagram shows three towns P, Q, and R. $\angle PRQ = 46°$ and $\angle RQP = 42°$.
The bearing from P to Q is 160°.
What is the bearing of R from P?

(A) 072°

(B) 206°

(C) 248°

(D) 252°



$92 + 160$

$= 252$

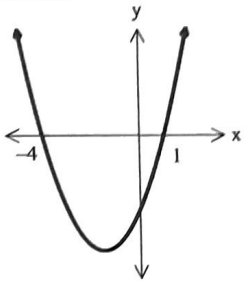
5 Which of the following could describe the graph shown?

(A) $y = (x - 4)(x - 1)$

(B) $y = (x + 4)(x + 1)$

(C) $y = (x + 4)(x - 1)$

(D) $y = (x - 4)(x + 1)$



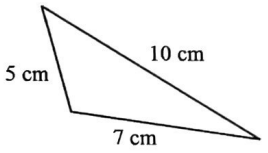
6 Which of the following would be used to determine the size of the largest angle?

(A) $\cos\theta = \frac{5^2 + 10^2 - 7^2}{2 \times 5 \times 10}$

(B) $\cos\theta = \frac{5^2 + 7^2 - 10^2}{2 \times 5 \times 7}$

(C) $\cos\theta = \frac{7^2 + 10^2 - 5^2}{2 \times 7 \times 10}$

(D) $\cos\theta = \frac{5^2 + 7^2 - 10^2}{2 \times 5 \times 10}$



7 What is the solution to the equation $2x^3 + 128 = 0$?

(A) -8

(B) -4

(C) 4

(D) 8

$x^3 + 64 = 0$

$x^3 = -64$

$x = -4$

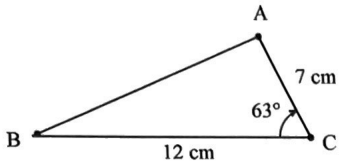
8 Which of the following is used to calculate the area of triangle ABC?

(A) $42\cos 63°$

(B) $84\cos 63°$

(C) $42\sin 63°$

(D) $84\sin 63°$



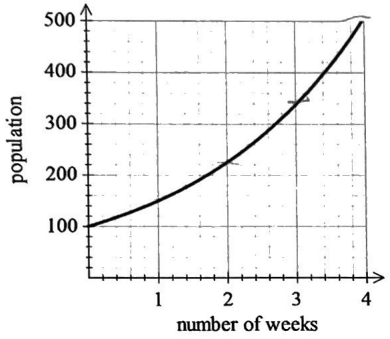
9 The graph below shows the number of rabbits in a colony.
During which week will the population of the colony double its original size?

(A) 1st week

(B) 2nd week

(C) 3rd week

(D) 4th week



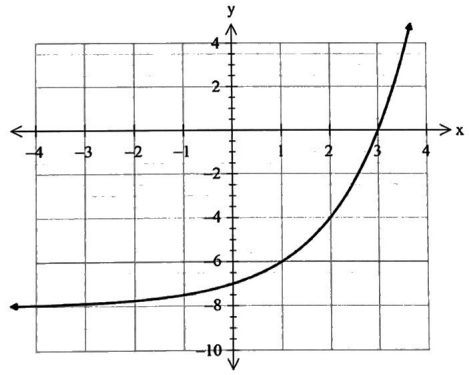
10 Which of the following could describe the graph shown?

(A) $y = 2^x - 7$

(B) $y = 2^x - 8$

(C) $y = -7 - 2^x$

(D) $y = 8 - 2^x$



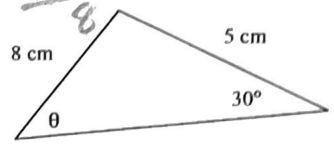
11 What is the value of sin θ?

(A) $\frac{5}{16}$

(B) $\frac{4}{5}$

(C) $\frac{5}{8}$

(D) $\frac{5}{4}$



12 The solution to a pair of simultaneous equations is shown below.
In which line does the first mistake occur?

$3x + y = 20$ ..... ①	
$5x - 2y = 26$ ..... ②	
$6x + 2y = 40$ ..... ③ ① × 2	..... Line 1
$11x = 66$ ..... ④ ② + ③	..... Line 2
$x = 6$ ..... ⑤	..... Line 3
$30 + y = 20$ Sub ⑤ in ①	..... Line 4
$y = -10$	
Solution $(6, -10)$	

(A) Line 1

(B) Line 2

(C) Line 3

(D) Line 4

13 What is the future value of \$3500 invested at 5% p.a. interest compounding annually for 5 years?

(A) \$4256

(B) \$4466

(C) \$4690

(D) \$4920

14 What is the annual simple interest rate when \$561 interest is earned on \$2200 over 3 years?

(A) \$561

(B) 8.5%

(C) 25.5%

(D) 5.61%

15 What is the value of y, if the gradient of the line passing through the points $(-3,5)$ and $(2,y)$ is -1?

(A) 3
(B) 0
(C) -1
(D) -3

$-1 = \frac{5-y}{-3-2}$

$-1 = \frac{5-y}{-5}$

$5 = 5-y \quad 0 = -y \quad 0 = y$

16 Which of the following are solutions to $6a^2+17a-3=0$?

(A) $a=-3$ and $a=\frac{1}{6}$
(B) $a=\frac{-1}{6}$ and $a=3$
(C) $a=3$ and $a=2\frac{5}{6}$
(D) $a=6$ and $a=12$

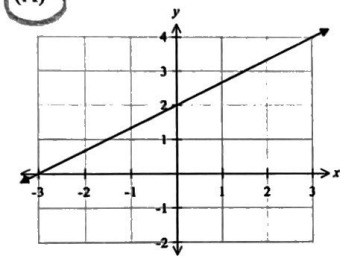
$(6a-1)(a+3)=0$

$a=\frac{1}{6} \quad a=-3$

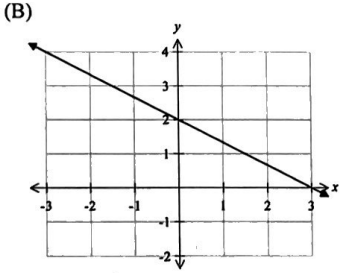
$6a \times -1$
$a \times 3$

17 Which graph represents the equation $y=\frac{2}{3}x+2$?

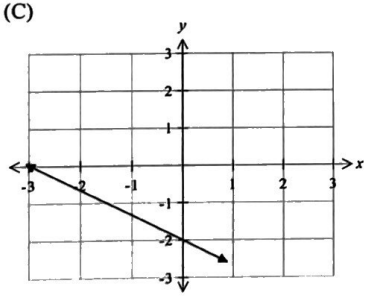
(A)



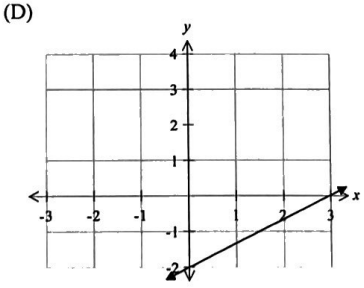
(B)



(C)



(D)



18 Roula paid \$37 250 for a new van for her courier service and depreciated it at 28%p.a. What was the depreciated value of the van after two years?

(A) \$16 390
(B) \$17 939.60
(C) \$19 310.40
(D) \$20 860

$A = 37250(1-0.28)^2$

$A = 19\,310.4$

19 y is directly proportional to x, and $y=450$ when $x=15$. What is the rule relating x and y?

(A) $y=0.0333x$
(B) $y=30x$
(C) $y=60x$
(D) $y=6750x$

$y \propto x$

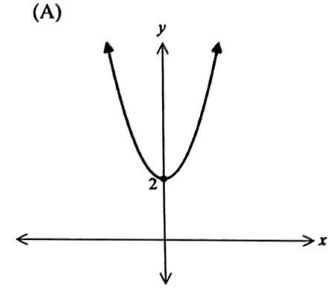
$y=kx$

$450=15k$

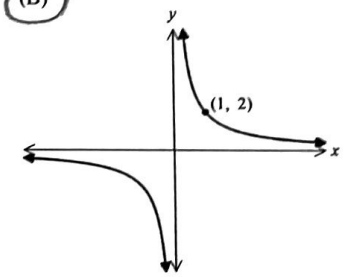
$30=k \quad y=30x$

20 Which of the following graphs shows $y=\frac{2}{x}$?

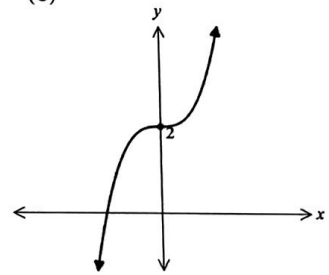
(A)



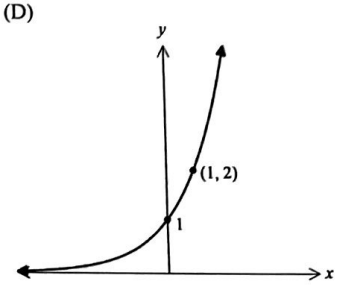
(B)



(C)



(D)



21 What is the solution to the pair of simultaneous equations

$5x+7y-3=0$ and $y=7-4x$?

(A) $x=-2,\ y=-1$

(B) $x=2,\ y=-1$

(C) $x=-1,\ y=2$

(D) $x=1,\ y=3$

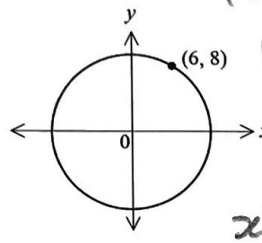
$5x+7(7-4x)-3=0$

$5x+49-28x-3=0$

$46=23x$

$2=x$

22 What is the equation of this circle?



(A) $x^2+y^2=28$

(B) $x^2+y^2=36$

(C) $x^2+y^2=64$

(D) $x^2+y^2=100$

$(0,0)\ (6,8)$

$r=\sqrt{(6-0)^2+(8-0)^2}$

$=\sqrt{36+64}$

$r=10$

$x^2+y^2=r^2$

$x^2+y^2=100$

23 Two lines have equations $y=5x-7$ and $y=-5x-7$.
Which of the following sentences is **not** true?

(A) Both lines have a y-intercept of -7.

(B) The lines have a point of intersection at $(0,-7)$.

(C) The lines have different gradients.

(D) The lines have the same gradient.

24 Which translations are required to change $y=x^2$ into $y=(x-3)^2+2$?

(A) left 3, up 2

(B) left 3, down 2

(C) right 3, down 2

(D) right 3, up 2

25 Which of the following is an exact solution to the equation $x^2+2x-5=0$?

(A) $-1+\sqrt{24}$

(B) $-1+\sqrt{6}$

(C) $\dfrac{2+\sqrt{-16}}{2}$

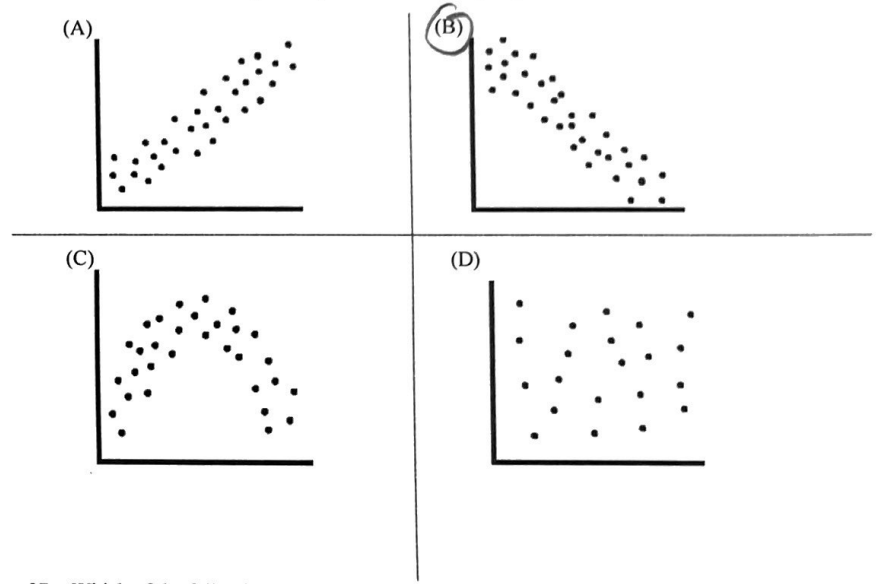
(D) $\dfrac{2+\sqrt{24}}{2}$

$x=\dfrac{-2\pm\sqrt{2^2-4(1)(-5)}}{2(1)}$

$=\dfrac{-2\pm\sqrt{24}}{2}$

$=\dfrac{-2\pm2\sqrt{6}}{2}=-1\pm\sqrt{6}$

26 Which of the following scatterplots show a strong negative correlation?



27 Which of the following statements is false?

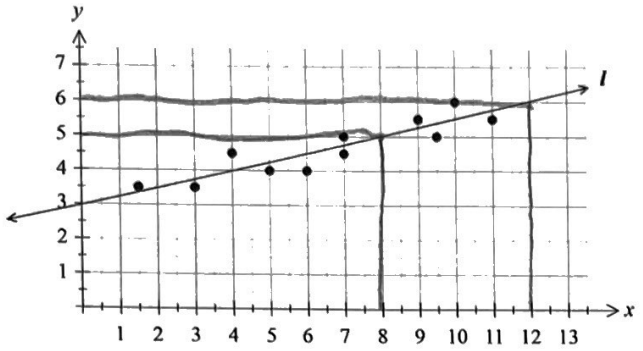
(A) A line of best fit often has roughly the same number of points above and below it.

(B) To find the gradient of the line of best fit, we must choose two of the points from the given data.

(C) The line of best fit can be used for predictions.

(D) The line of best fit does not necessarily have to go through the origin.

28



A line of best fit, l, is drawn through the points as shown.

What is the correct equation for line l ?

(A) $y=\frac{x}{4}+3$

(B) $y=\frac{x}{4}-3$

(C) $y=4x-12$

(D) $y=4x+3$

(8,5) (12,6)

$m=\frac{6-5}{12-8}$

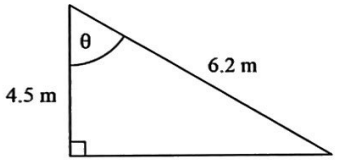
$m=\frac{1}{4}$

$y=\frac{x}{4}+c$

$5=\frac{8}{4}+c$

$3=c$

29 The size of angle θ in this diagram (correct to the nearest minute) is equal to which of the given answers?



(A) 43°27'

(B) 43°28'

(C) 46°32'

(D) 46°33'

$\cos\theta=\frac{4.5}{6.2}$

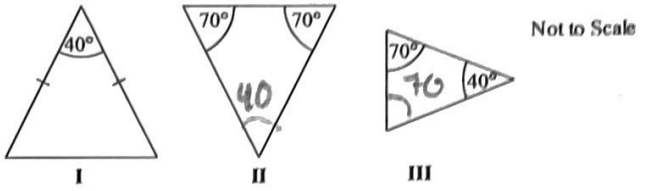
$\theta=\cos^{-1}\left(\frac{4.5}{6.2}\right)$

$\theta=43.46\ldots$

$\theta=43°27'60.48''$

$\theta=43°28'$

30 Which of the following statements is true?



(A) Only triangles I and II are similar?

(B) Only triangles II and III are similar?

(C) All three triangles are similar?

(D) None of the triangles are similar?

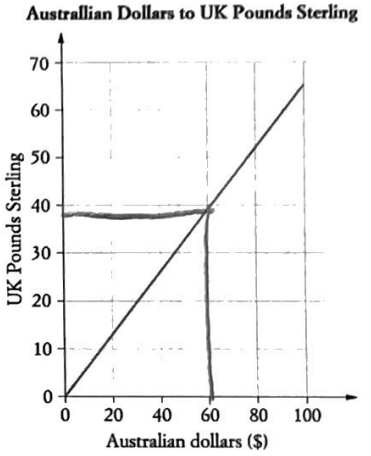
31 Based on the conversion graph below, what is \$A60worth in UK pounds?

(A) 35 pounds

(B) 39 pounds

(C) 86 pounds

(D) 88 pounds



$y\propto\frac{1}{x}$

32 Which of the following is an example of inverse proportion?

(A) Amount of petrol in the car and the distance the car can travel safely before refuelling.

(B) Amount of groceries bought and total price of groceries.

(C) Number of hours worked and daily wage.

(D) A car's average speed and the time it takes to reach a destination.

33 What is the equivalent rate of \$10/kg in cents in cents/gram?

(A) 1 cent/gram

(B) 10 cents/gram

(C) 100 cents/gram

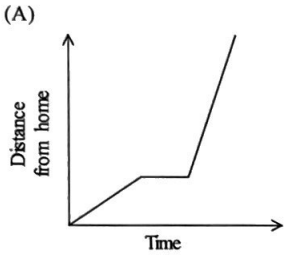
(D) 1000 cents/gram

1000 / 1000

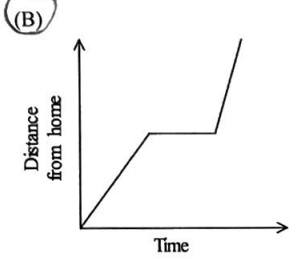
1/1

34 When Sam is travelling from home to school he walks halfway then takes a short break. His friend drives past and offers him a lift so he is driven the rest of the distance to school. Which graph best represents Sam's journey?

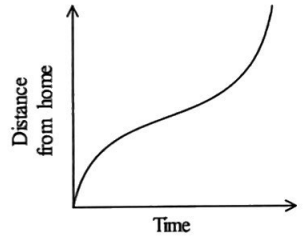
(A)



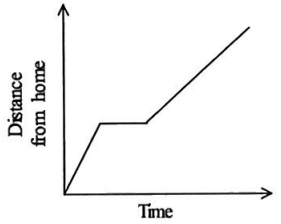
(B)



(C)



(D)



35 Two similar triangles have areas in the ratio 4 : 9. If one side of the smaller triangle is 12 cm long, what is the length of the matching side in the larger triangle?

(A) 18 cm

(B) 27 cm

(C) 108 cm

(D) 729 cm

×3 4 : 9

12 : 27

36 The cash price for a computer is \$1990. The computer could be bought on terms for 20% deposit and \$36 per week for one year.

What is the saving if it is bought for cash?

(A) \$118

(B) \$280

(C) \$398

(D) \$1872

1990 − (1990 × 0.2)

= 1990 − 398

= 1592

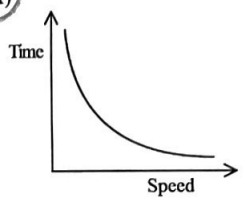
398 + (36 × 52) = 2270

2270 − 1990

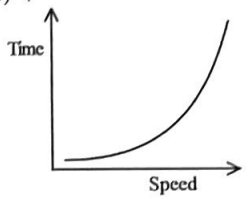
= 280

37 The time for a car to travel a certain distance varies inversely with its speed. Which of the following graphs shows this relationship?

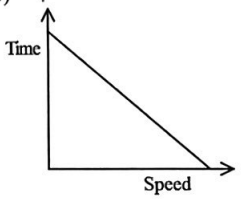
(A)



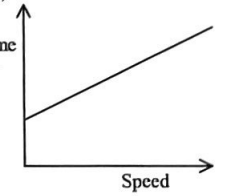
(B)



(C)



(D)



38 A sum of \$7000 is invested for 3 years at the rate of 5.75% p.a., compounded quarterly. The interest paid on this investment, to the nearest dollar, is which of the following?

(A) \$1208

(B) \$1308

(C) \$8208

(D) \$8308

$A = 7000\left(1 + \frac{0.0575}{4}\right)^{12}$

A = 8307.69...

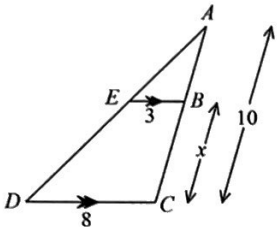
A = 8308

39 When solving $5x-3y=8$ and $2x+y=4$ by elimination, the first line after eliminating y would be which of the following?

$5x-3y=8$ ①
$6x+3y=12$ ②
① + ②
$11x=20$

(A) $7x-2y=12$
(B) $7x=12$
(C) $x=4$
(D) $11x=20$

40 Which of the following gives the Similarity Test that proves ΔABE is similar to ΔACD and the correct value of x?



(A) Equiangular; $x=3.75$
(B) Equiangular; $x=6.25$
(C) Two pairs of corresponding sides in the same ratio and included angle equal; $x=3.75$
(D) Two pairs of corresponding sides in the same ratio and included angle equal; $x=6.25$

41 Ming invests \$10 000 for 5 years, compounding monthly, resulting in a final amount of \$12 250.
Which one of the following is the percentage interest rate per compounding term?

$12250=10000(1+r)^{60}$
$1.225=(1+r)^{60}$
$1.003388...=1+r$
$0.003388=r$
$0.338...\%=r$
$0.339=r$

(A) 0.137%
(B) 0.339%
(C) 1.71%
(D) 3.39%

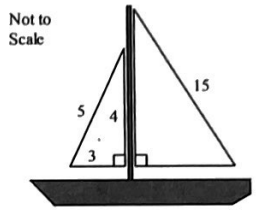
42 What is the amount that must be invested at 4.8% p.a. interest compounding monthly to have \$4500 at the end of 3 years?

$4500=P\left(1+\frac{0.048}{12}\right)^{36}$
$3897.61...=P$

(A) \$3897.61
(B) 3909.57
(C) \$832.16
(D) \$3899.84

43 A model yacht has two triangular sails. These triangles are similar to each other. Some dimensions of the sails, in centimetres, are shown on the diagram.

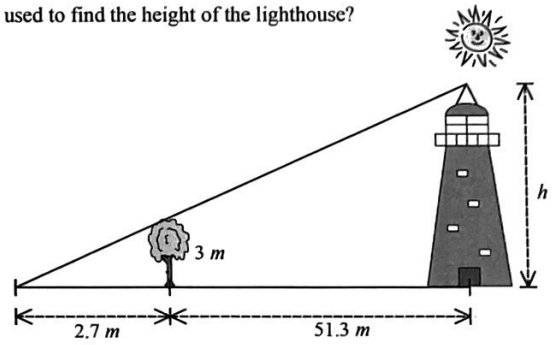
What is the total area of both sails?



(A) 24 cm^2
(B) 27 cm^2
(C) 60 cm^2
(D) 97 cm^2

44 The diagram shows a 3 metre tall tree which casts a shadow of 2.7 metres and a lighthouse which casts a shadow of 54 metres at the same time of the day.

Which equation can be used to find the height of the lighthouse?

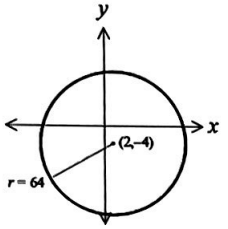


(A) $\frac{h}{3}=\frac{2.7}{51.3}$
(B) $\frac{h}{3}=\frac{51.3}{2.7}$
(C) $\frac{h}{3}=\frac{2.7}{54}$
(D) $\frac{h}{3}=\frac{54}{2.7}$

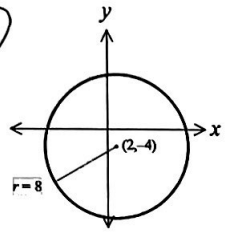
$3:2.7$ $\times 20$
$h:54$ $\times 20$
$h=60$

45 Which graph would represent $x^2 - 4x + y^2 + 8y = 44$?

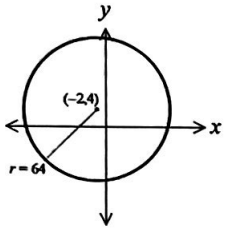
(A)



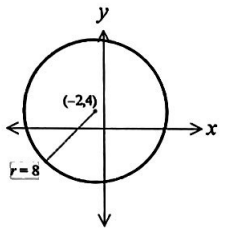
(B)



(C)



(D)



$(x^2-4x+4)+(y^2+8y+16) = 44+4+16$

$(x-2)^2+(y+4)^2 = 64$

center = $(2,-4)$

radius = 8

End of Assessment