"BETWEEN PAPERS" PRACTICE

1 OF 1 (F&H)

thanks to Adam Smith & Don Walker

SUMMER 2018

SOLUTIONS

NOT A "BEST" GUESS PAPER.

NEITHER IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT! YOU ALSO NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 OR PAPER 2 IT MAY STILL COME UP ON PAPER 3 ...

WE KNOW HOW IMPORTANT IT IS TO PRACTICE, PRACTICE, PRACTICE .... SO WE'VE COLLATED A LOAD OF QUESTIONS THAT WEREN'T EXAMINED IN THE AQA 9-1 GCSE MATHS PAPER 1 OR PAPER 2 BUT WE CANNOT GUARANTEE HOW A TOPIC WILL BE EXAMINED IN THE NEXT PAPERS ...

ENJOY!
MEL & SEAGER

Q1. Which statement is true? Circle your answer.

10% of 50 = 50% of 20

10% of 10 = 20% of 20

10% of 20 = 20% of 10

10% of 40 = 25% of 100

[1]

Q2. Factorise $x^2 - y^2$ $(x+y)(x-y)$ Difference of two squares [1]

Q3. Adam and six other men ran a race.

The times, in seconds, of the six other men are shown.

9.75 9.79 9.80 9.88 9.94 9.98

The mean time for **all seven** men was 9.83 seconds.

Did Adam win the race?

You must show your working.

number 6 7

total 59.14 $9.83 \times 7 = 68.81$

Adams time $= 68.81 - 59.14$

$= 9.67$

he won $9.67 < 9.75$

[3]

Q4. (a) Factorise fully $9a^2 - 6a$

$3a(3a-2)$ [2]

(b) Solve $x^2 - 12x + 20 = 0$

$(x-10)(x-2) = 0$ $x = 10$ $x = 2$ [3]

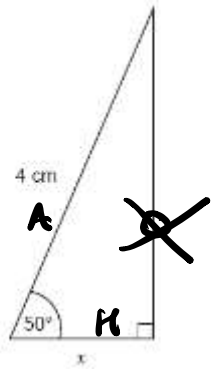
Q5. Work out the value of x. Give your answer to 1 decimal place.

SOH CAH TOA

$\cos 50 = \frac{x}{4}$

$x = 4 \times \cos 50$

$x = 2.6$ [2]



Not drawn accurately

Q6. The pressure at sea level is 101 325 Pascals. Any rise of 1 km above sea level decreases the pressure by 14% For example,

at 3 km above sea level the pressure is 14% less than at 2 km

100% sea level

86% 14

Work out the pressure at 4 km above sea level.

Give your answer to 2 significant figures.

1km = $101325 \times 0.86 = 87139.5$

2km = $87139.5 \times 0.86 =$ etc.

OR $101325 \times 0.86^4 = 55425.6$

55,000 Pascals [4]

Q7. In 1999 the minimum wage for adults was £3.60 per hour.

In 2013 it was £6.31 per hour.

Work out the percentage increase in the minimum wage.

6·31 − 3·60
= 2·71

change / original × 100

$\frac{2.71}{3.60} \times 100$

75·28 % [3]

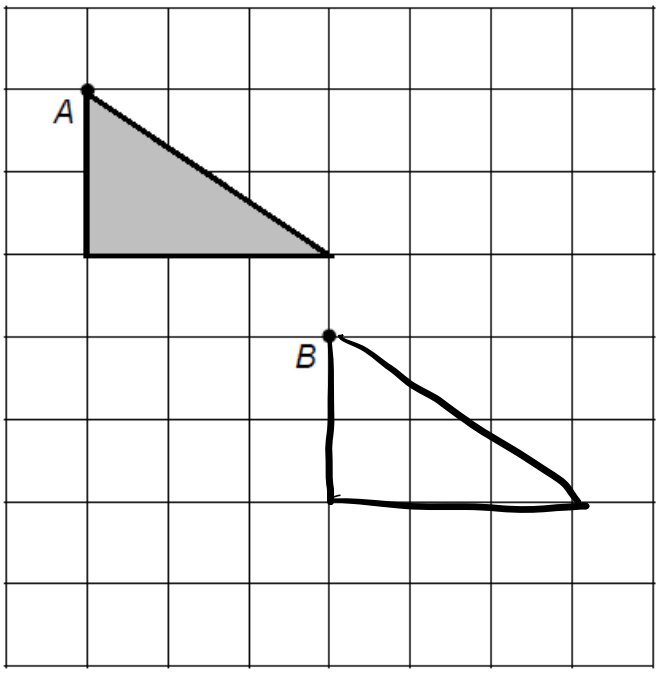
Q8. Expand and simplify (y - 5)(y - 2)

$y^2 - 2y - 5y + 10$

$y^2 - 7y + 10$

[2]

Q9. Translate the triangle so that point A moves to point B.



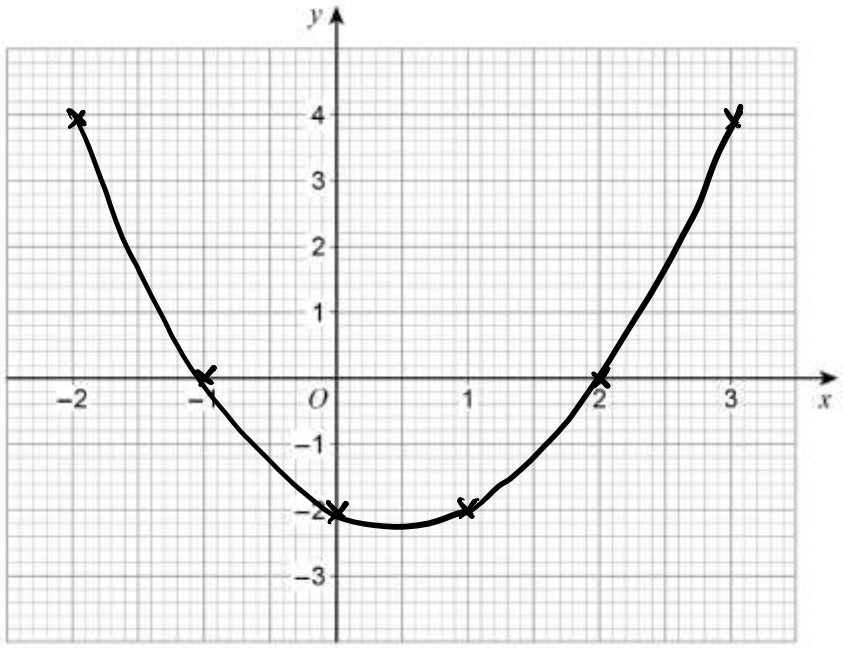
[1]

Q10. (a) Complete the table of values for $y = x^2 - x - 2$

x	−2	−1	0	1	2	3
y	4	0	−2	−2	0	4

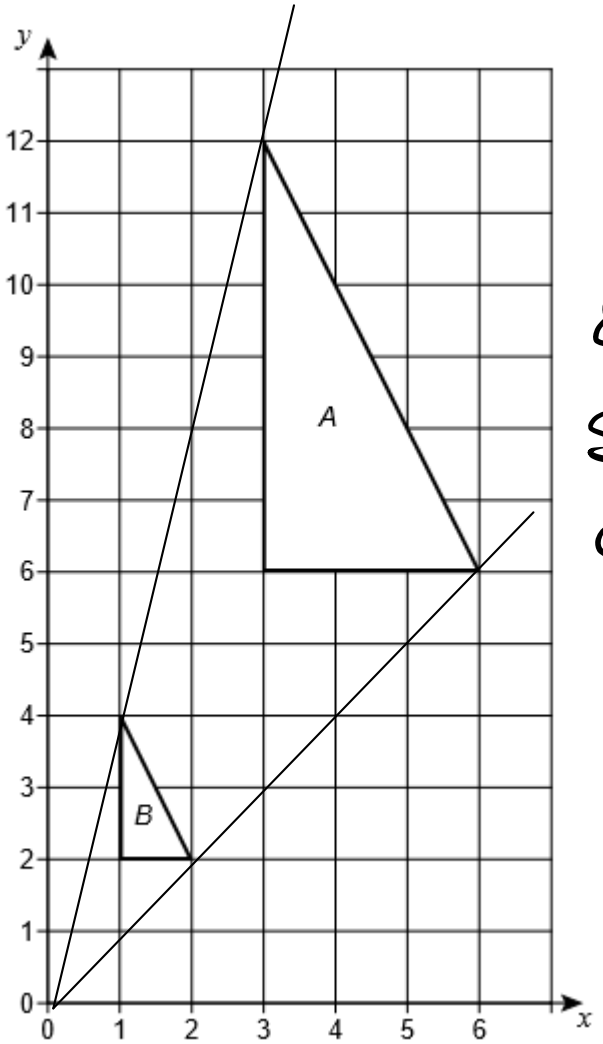
[2 marks]

(b) Draw the graph of $y = x^2 - x - 2$ for values of x from −2 to 3



[2 marks]

Q11. Describe fully the single transformation that maps triangle A to triangle B.



Enlargement
Scale factor 3
centre (0,0)

[3]

Q12. Mel invests £6000 at a compound interest rate of 1.5% per year.
She wants to earn more than £1000 interest.
Work out the least time, in whole years, that this will take.

1·015

1yr $6000 \times 1.015 = 6090$ ✗

2yrs $6000 \times 1.015^2 = 6181$ ✗ ...

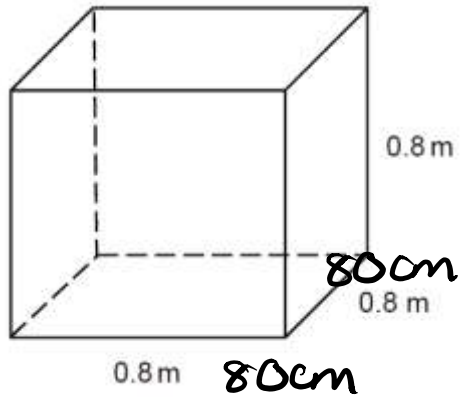
10yrs $6000 \times 1.015^{10} = 6963$ ✗

11yrs $6000 \times 1.015^{11} = 7068$ ✓

[3 marks]

11 years

Q13. A cube has edges of length 0.8 metres.



80cm

80cm

80cm

Work out its volume in cubic centimetres.

$80 \times 80 \times 80$

512,000 cm^3 [2]

Q14 Solve $12x = 3$

Circle your answer.

$x = \frac{3}{12} = \frac{1}{4}$

[1]

x = -9 $x = \frac{1}{4}$ x = 4 x = 36

Q15. A line has the equation $y = 4x - 5$

a) What is the gradient of the line? Circle your answer.

[1]

−5 −4 4 5

b) What is the y-intercept of the line? Circle your answer.

[1]

−5 −4 4 5

Q16. Make *t* the subject of the formula $w = 3t + 11$

$w - 11 = 3t$

$t = \frac{w - 11}{3}$

[2]

Q17. Toilet rolls come in packs of 4 and 9

1.89 ÷ 4

£0.4727

£1.89

£3.99

3.99 ÷ 9

= £0.443

Which pack is better value?

You must show your working.

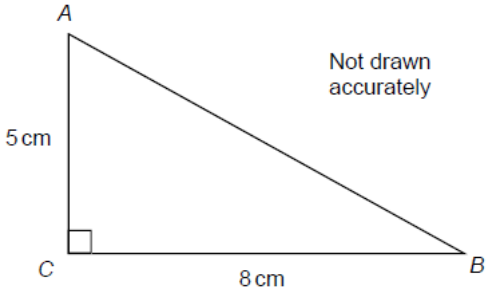
Pack of 9 is better

[3]

Q18. Write 98 as a product of its prime factors

[1]

Q19. How long is side AB?



$5^2 + 8^2$

$25 + 64 = 89$

Tick a box.

Between 5 cm and 8 cm	☐	8 cm	☐
Between 8 cm and 13 cm	☑	More than 13 cm	☐

[1]

Q20. A drink is mixed in the ratio

lemonade : orange : cranberry = 6 : 3 : 2

$6 + 3 + 2 = 11$

What fraction is orange?

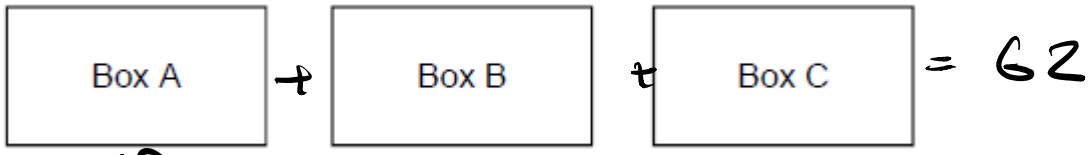
$\frac{3}{11}$

Circle your answer.

[1]

$\frac{3}{8}$ $\frac{2}{11}$ $\frac{3}{11}$ $\frac{6}{11}$

Q21. Three boxes contain counters.



19 28

There are 62 counters in total.

The total number of counters in box A and box B is 34

The difference between the number of counters in box A and box C is 9

Work out the number of counters in each box.

$A + B + C = 62$

$A + B = 34$

$34 + C = 62$

$C = 28$

$C - A = 28 - A = 9$

$\therefore A = 19$

Box A 19 Box B 15 Box C 28 [3]