High School
Mathematics Test 2015

Year 7	*Integers*	Non Calculator Test

Name_____

Skills and Knowledge Assessed:

- Investigate everyday situations that use integers. Locate and represent these numbers on a number line (ACMNA124)
- Compare, order, add and subtract integers (ACMNA280)
- Carry out the four operations with (rational numbers and) integers, using efficient mental and written strategies and appropriate digital technologies (ACMNA183)

Answer all questions in the spaces provided on this test paper by:

Writing the answer in the box provided.

or

Shading in the bubble for the correct answer from the four choices provided.

Show any working out on the test paper.   Calculators are **not** allowed.

Questions 1 – 5 refer to the following.

A football coach labels the football field as shown, with distances (in metres) in the opposition half as positive and those into their own half as negative.
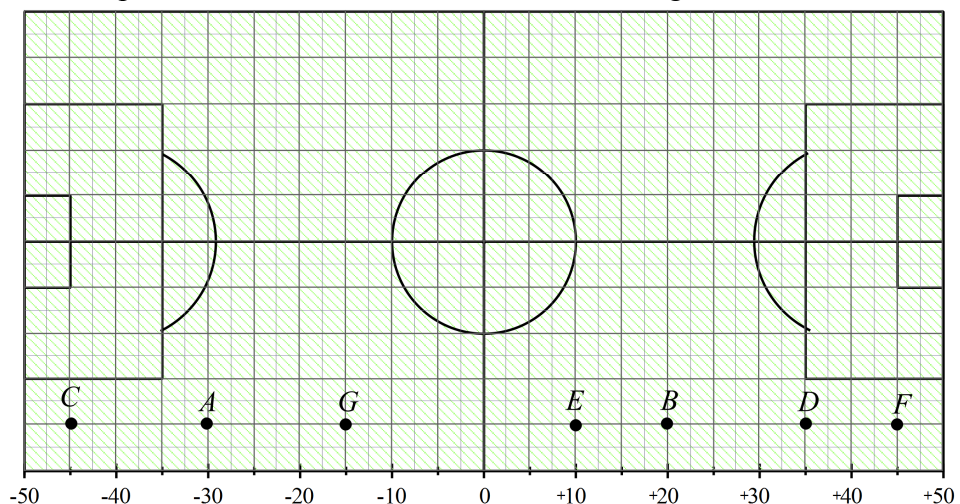
1.	A player kicks a ball from *A* (-30) to *B* (+20).
	How many metres did the ball travel?
	☐ 10 metres ☐ 20 metres ☐ 50 metres ☐ 60 metres

2.	A player starts from *C* (-45) and kicks the ball 80 m to the right.
	What is the position of the ball now?
	☐ –35 ☐ –15 ☐ + 15 ☐ + 35

3.	Which of these describes a kick which would move the ball from to D (+35) to E(+10)?

☐ 25 m to the left   ☐ 25 m to the right

☐ 50 m to the left   ☐ 50 m to the right

4.	Which of these describes a kick which would move the ball from to F (+45) to G(-15)?

☐ 30 m to the left   ☐ 30 m to the right

☐ 60 m to the left   ☐ 60 m to the right

5.	A player starts from -10 and kicks the ball 30 m to the left, then another player kicks it 50 m to the right.

What is the position of the ball now?

☐ −10   ☐ + 10   ☐ + 35   ☐ + 70

Questions 6 – 10 refer to the following:

The statement below was provided by Westanz Bank for Ronnie's Account.

Date	Transaction	Balance
3 / 6 / 2015	Opening Balance	$15
9 / 6 / 2015	Withdrawal of $40	– $25
12 / 6 / 2015	Withdrawal of $105	– $130
15 / 6 / 2015	Deposit of $70	– $60
21 / 6 / 2015	Deposit of $90	
25 / 6 / 2015	Withdrawal of $100	
30 / 6 / 2015		$50

6.	What is the balance on 21 / 6 / 2015?

☐ – $150   ☐ – $30   ☐ $20   ☐ $30

7.	What is the balance on 25 / 6 / 2015?

8.	On the 30 / 5 / 2015 Ronnie makes a transaction that brings the balance to $50.

What was the transaction?

☐ Deposit of $120   ☐ Deposit of $20

☐ Withdrawal of $120   ☐ Withdrawal of $20

Later in the year her account statement showed the following.

Date	Transaction	Balance
1 / 7 / 2015	Opening balance	
2 / 7 / 2015	Deposit of $120	$40
5 / 7 / 2015		− $130

9. What was the opening balance?

10. What transaction did she make on 5 / 7 / 2015?

11. $7 - 17 =$

12. $-5 + 9 =$

☐ −9   ☐ −4   ☐ 4   ☐ 9

13. $-13 + (-12) =$

14. $-10 + 5 =$

15. $9 + (-15) =$

☐ −24   ☐ −6   ☐ 6   ☐ 24

16. $6 - (-7) =$

☐ −13   ☐ −1   ☐ 1   ☐ 13

17. $-2 - (-9) =$

18.	$-6 - 9 =$

19. $-3 + 6 + (-5) =$

☐ −2   ☐ 2   ☐ 4   ☐ 8

20. $-20 + 12 - (-8) + (-2) =$

☐ −18   ☐ −2   ☐ 2   ☐ 18

21.   In North America, Death Valley has an elevation of −85 metres relative to sea level, and McKinley has an elevation of + 6 090 metres relative to sea level. What is the difference in their elevations?

22.   When playing *War Heroes*, Marcus resumes the game with a score of 20 000, then he loses 15 000 points, before gaining another 5 000 points and then losing another 15 000 points, at which point he pauses the game. How many points does he have when he pauses?

23.   The numbers −10 and 6 are marked on the number line below. What is the third number (labelled *Q*) which is marked on the number line?

-10   *Q*   6
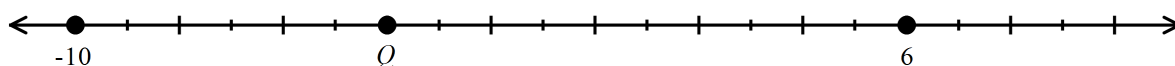
24.   Mark the numbers −6 and 12 on the number line below.

-10   0   10
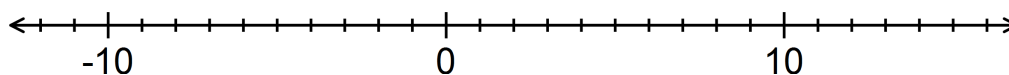
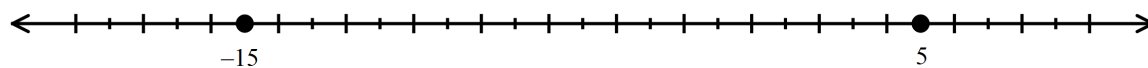|	
25.	What number is halfway between −15 and 5 on the number line? ☐ − 5 ☐ − 3 ☐ − 2 ☐ − 1
26.	Re-write the numbers 8, –9, –11, 3 and –14 in ascending order. ☐ ☐ ☐ ☐ ☐
27.	Which statement is correct? ☐ 14 < − 15 ☐ −12 > − 15 ☐ −12 < − 15 ☐ −16 > − 15
28.	Write the next two numbers in the number pattern. 3, −3, −9, ☐ , ☐
29.	−5 × −8 = ☐ − 40 ☐ − 13 ☐ −13 ☐ 40
30.	−7 × 9 = ☐
31.	10 × −6 = ☐
32.	−8 × −4 × 2 = ☐ − 64 ☐ − 32 ☐ 64 ☐ 128
33.	$(-10)^2$ = ☐

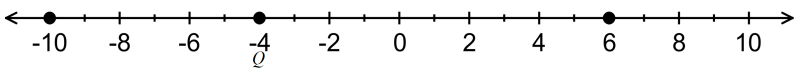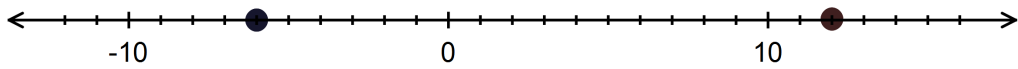|		
34.	$-45 \div (-5) =$	
35.	$63 \div (-7) =$	
36.	$-56 \div 7 =$	
37.	$\dfrac{-90}{-3} =$	
38.	$-8 \times -5 \div -2 =$	
39.	$-6 \times (-3 - 9) =$	
40.	$(-2)^2 \times (-3)^3 =$	
41.	$\dfrac{-7 - 5}{-4 - (-6)} =$	
42.	Lynda started with $- \$240$ in her bank account at the start of May. During May she had four deposits of her pay of $ 250 and she made six withdrawals of $120 each. What was the balance of the account at the end of May?	

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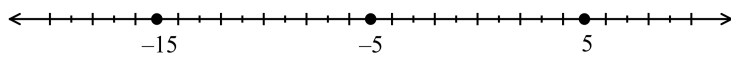
Year 7	Integers	Non Calculator Section

ANSWERS

No.	WORKING	ANSWER
1.	From -30 to $+20 = 30 + 20 = 50$ metres	3rd answer
2.	$-45 + 80 = +35$	4th answer
3.	From to D (+35) to E(+10) is to the left and a distance of $35 - 10 = 25$.	1st answer
4.	From to F (+45) to G(-15) is to the left and a distance of $45 + 15 = 60$.	3rd answer
5.	$-10 - 30 + 50 = -40 + 50 = +10$	2nd answer
6.	$-60 + 90 = \$30$	4th answer
7.	$30 - 100 = -70$	$-\$70$
8.	From -70 to a balance of 50 is increase of $120	1st answer
9.	OB + 120 = 40 OB = 40 − 120 = -80	$-\$80$
10.	From 40 to a balance of -130 is decrease of $170	Withdrawal of $170
11.	$7 - 17 = -10$	-10

12.	$-5 + 9 = +4$	3rd answer
13.	$-13 + (-12) = -25$	-25
14.	$-10 + 5 = -5$	-5
15.	$9 + (-15) = 9 - 15 = -6$	2nd answer
16.	$6 - (-7) = 6 + 7 = 13$	4th answer
17.	$-2 - (-9) = -2 + 9 = 7$	7
18.	$-6 - 9 = -15$	-15
19.	$-3 + 6 + (-5) = 3 + (-5) = -2$	1st answer
20.	$-20 + 12 - (-8) + (-2) = -8 - (-8) + (-2)$ $\qquad\qquad\qquad\qquad = -8 + 8 + (-2)$ $\qquad\qquad\qquad\qquad = 0 - 2$ $\qquad\qquad\qquad\qquad = -2$	2nd answer
21.	From -85 to $+6090$ is $85 + 6090 = 6\ 175$	6 175 metres
22.	$20\ 000 - 15\ 000 = 5\ 000$ $\quad 5\ 000 + 5\ 000 = 10\ 000$ $10\ 000 - 15\ 000 = -5\ 000$	- 5 000 points
23.		Q is -4
24.		
25.		1st answer

26.	–14 , –11, –9, 3, 8	–14 , –11, –9, 3, 8
27.	$-12 > -15$ as -12 is to the right of -15.	2nd answer
28.	The pattern is decreasing by 6 each time. 3, –3, –9, $\boxed{-15}$, $\boxed{-21}$	$\boxed{-15}$, $\boxed{-21}$
29.	$-5 \times -8 = +40$	4th answer
30.	$-7 \times 9 = -63$	-63
31.	$10 \times -6 = -60$	-60
32.	$-8 \times -4 \times 2 = 32 \times 2 = 64$	3rd answer
33.	$(-10)^2 = -10 \times -10 = 100$	100
34.	$-45 \div (-5) = 9$	9
35.	$63 \div (-7) = -9$	-9
36.	$-56 \div 7 = -8$	-8
37.	$\dfrac{-90}{-3} = 30$	30
38.	$-8 \times -5 \div -2 = 40 \div -2 = -20$	-20
39.	$-6 \times (-3 - 9) = -6 \times -12 = 72$	72
40.	$(-2)^2 \times (-3)^3 = 4 \times (-27) = -108$	-108

41.	$\dfrac{-7-5}{-4-(-6)} = \dfrac{-12}{2} = -6$	-6
42.	$\begin{aligned} -240 + 4 \times 250 + 6 \times (-120) &= -240 + 1000 - 720 \\ &= 1000 - 960 \\ &= -40 \end{aligned}$	-$40