

High School Mathematics Test 2014

Year 7

Integers

Non Calculator
Test

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)

Name _____

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

Writing the answer in the box provided.

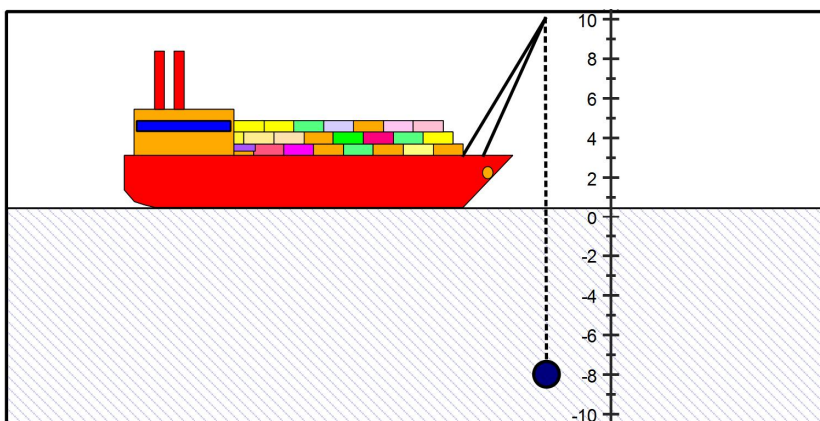
or

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 – 4 refer to the following.

A ship has a winch which reaches 10 m above water level and can be used to lower a diving bell below water level. Distances above and below the water are given as positive and negative numbers respectively.



- If the bell starts at the position shown and is raised 9 m, what is its new position?
☐ -17 ☐ -1 ☐ +1 ☐ +10
- Which of these describes how the bell would move when going from the position shown until it was level with the deck of the ship?
☐ 11 metres down. ☐ 5 metres down. ☐ 5 metres up. ☐ 11 metres up.
- Which of these describes how the bell would move when going from the top of the winch until it was 6 metres below the water?
☐ 16 metres down. ☐ 12 metres down. ☐ 6 metres down. ☐ 4 metres down.
- When the bell moves 9 metres downward it finishes at -4. From what position did it begin this move?
☐ -5 ☐ -4 ☐ +5 ☐ +9

Questions 5 – 8 refer to the following:

The statement below was provided by Sam's bank for May.

Date	Transaction	Balance
1 / 5 / 2014	Opening Balance	\$120
4 / 5 / 2014	Withdrawal of \$40	\$80
10 / 5 / 2014	Withdrawal of \$110	– \$30
15 / 5 / 2014	Withdrawal of \$70	– \$100
20 / 5 / 2014	Deposit of \$80	
24 / 5 / 2014	Withdrawal of \$100	
26 / 5 / 2014	Deposit of \$30	
28 / 5 / 2014		– \$50

5. What is the balance on 20 / 5 / 2014?

☐ – \$180

☐ – \$40

☐ – \$20

☐ \$20

6. What is the balance on 26 / 5 / 2014?

7. On the 28 / 5 / 2014 Sam makes a transaction that brings the balance to – \$50.
What was the transaction?

☐ Deposit of \$20

☐ Deposit of \$40

☐ Withdrawal of \$20

☐ Withdrawal of \$40

8. Later in the year her account statement showed the following.

Date	Transaction	Balance
1 / 6 / 2014	Opening balance	
2 / 6 / 2014	Deposit of \$110	\$40

What was the opening balance?

9. $12 - 18 =$

10. $-15 + 6 =$

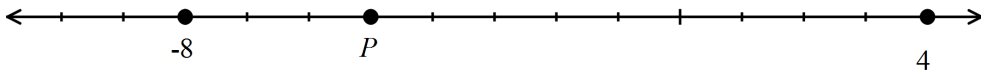
☐ –9

☐ –5

☐ 5

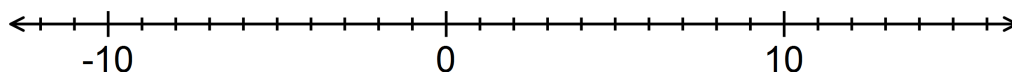
☐ 9

11. $-11 + (-9) =$

12.	$16 + (-9) =$	<input type="text"/>
13.	$11 + (-17) =$ <input type="text"/> -27 <input type="text"/> -6 <input type="text"/> 6 <input type="text"/> 27	
14.	$1 - (-9) =$ <input type="text"/> -10 <input type="text"/> -8 <input type="text"/> 8 <input type="text"/> 10	
15.	$-7 - (-4) =$	<input type="text"/>
16.	$-6 - 9 =$	<input type="text"/>
17.	$-5 + 7 - (-8) =$ <input type="text"/> -10 <input type="text"/> -6 <input type="text"/> -4 <input type="text"/> 10	
18.	$20 - 12 - (-5) + (-7) =$	<input type="text"/>
19.	Lake Eyre in South Australia has an elevation of -16 metres relative to sea level, and Mount Kosciuszko has an elevation of $+2\,228$ metres relative to sea level. What is the difference in their elevations? <input type="text"/> metres	
20.	In a game Callum wins 80 points, then loses 160 points, before winning 100 points and then losing another 180 points before the game ends. How many points does he have at the end? <input type="text"/>	
21.	The numbers -8 and 4 are marked on the number line below. What is the third number (labelled P) which is marked on the number line?  <input type="text"/>	

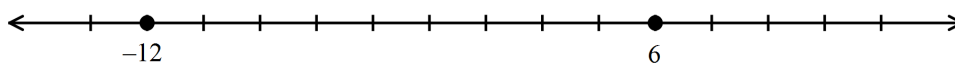
22.

Mark the numbers -9 and 7 on the number line below.



23.

What number is halfway between -12 and 6 on the number line?

☐ -6☐ -3☐ 3☐ 6

24.

Re-write the numbers -16, 9, -21, 3 and -25 in ascending order.

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25.

Which statement is correct?

☐ $-5 < -9$ ☐ $-5 > -9$ ☐ $-5 > 9$ ☐ $5 < -9$

26.

Write the next two numbers in the number pattern.

 $-11, -15, -19, \boxed{}, \boxed{}$

27.

 $-6 \times -7 =$ ☐ -42☐ -1☐ 1☐ 42

28.

 $5 \times -7 =$

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29.

 $-8 \times 7 =$

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30.

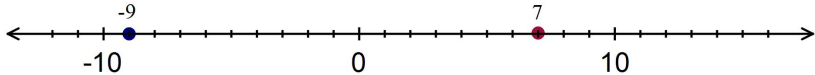
 $-8 \times -9 =$ ☐ -72☐ -20☐ -1☐ 72

31.	$(-9)^2 =$ <input type="checkbox"/> -81 <input type="checkbox"/> -18 <input type="checkbox"/> -18 <input type="checkbox"/> 81
32.	$-38 \div (-2) =$ <input type="text"/>
33.	$77 \div (-7) =$ <input type="text"/>
34.	$-52 \div 4 =$ <input type="text"/>
35.	$\frac{-80}{-8} =$ <input type="checkbox"/> -640 <input type="checkbox"/> -10 <input type="checkbox"/> 10 <input type="checkbox"/> 12
36.	$-8 \times -5 \times -3 =$ <input type="text"/>
37.	$-3 \times (5 - 11) =$ <input type="text"/>
38.	$(-2)^3 \times (-3)^2 =$ <input type="checkbox"/> -72 <input type="checkbox"/> -64 <input type="checkbox"/> -36 <input type="checkbox"/> 72
39.	$\frac{7-15}{-4} =$ <input type="text"/>
40.	Kensie started with $-\$160$ in her bank account. She made six deposits of $\$30$ each. What was the balance of the account after these deposit? <input type="text"/>

High School Mathematics Test 2014

Integers ANSWERS

Non Calculator Test (1 mark each)

Q no	
1.	$-8 + 9 = +1$ (3 rd Answer)
2.	8 metres up to sea and 3 more to deck = 11 metres up. (4 th Answer)
3.	10 metres down to sea and 6 more to -6 = 16 metres down. (1 st Answer)
4.	9 metres above -4 is +5 (3 rd Answer)
5.	$-100 + 80 = -\$20$ (3 rd Answer)
6.	$-20 - 100 + 30 = -\$90$
7.	$-90 + 40 = -50$ (2 nd Answer) Dposit of \$40.
8.	balance + 110 = 40 balance = $40 - 110 = -\$70$
9.	$12 - 18 = -6$
10.	$-15 + 6 = -9$ (1 st Answer)
11.	$-11 + (-9) = -20$
12.	$16 + (-9) = 7$
13.	$11 + (-17) = -6$ (2 nd Answer)
14.	$1 - (-9) = 1 + 9 = 10$ (4 th Answer)
15.	$-7 - (-4) = -7 + 4 = -3$
16.	$-6 - 9 = -15$
17.	$-5 + 7 - (-8) = 2 + 8 = 10$ (4 th Answer)
18.	$20 - 12 - (-5) + (-7) = 8 + 5 - 7 = 13 - 7 = 6$
19.	$2228 - -16 = 2228 + 16 = 2\,244$ metres
20.	$80 - 160 + 100 - 180 = 180 - 180 - 160 = -160$ points
21.	Three units to right of -8, so P = -5.
22.	
23.	$\frac{-12 + 6}{2} = -\frac{6}{2} = -3$

24.	-25, -21, -16, 3, 9
25.	$-5 > -9$ (2 nd Answer)
26.	-23, -27
27.	$-6 \times -7 = 42$ (4 th Answer)
28.	$5 \times -7 = -35$
29.	$-8 \times 7 = -56$
30.	$-8 \times -9 = 72$ (4 th Answer)
31.	$(-9)^2 = 81$ (4 th Answer)
32.	$-38 \div (-2) = 19$
33.	$77 \div (-7) = -11$
34.	$-52 \div 4 = -13$
35.	$\frac{-80}{-8} = 10$ (3 rd Answer)
36.	$-8 \times -5 \times -3 = 40 \times -3 = -120$
37.	$-3 \times (5 - 11) = -3 \times -6 = 18$
38.	$(-2)^3 \times (-3)^2 = -8 \times 9 = -72$ (1 st Answer)
39.	$\frac{7-15}{-4} = \frac{-8}{-4} = 2$
40.	$-160 + 6 \times 30 = -160 + 180 = 20$ Balance was \$20