

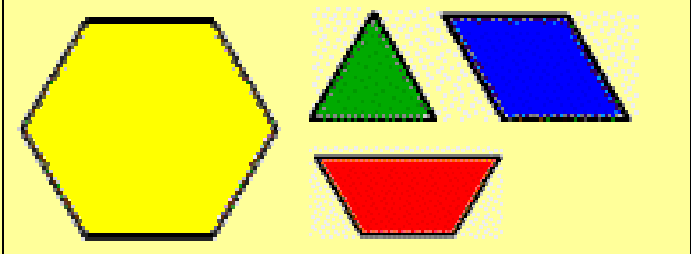


NQF Level: 2 US No: 9007

Assessment Guide

Primary Agriculture

Work with a range of patterns and functions and solve problems



Assessor:

Workplace / Company:

Commodity: Date:

Before we start...

This assessment guide contains all necessary activities and instructions that will enable the assessor and learner to gather evidence of the learner’s competence as required by the unit standard. This guide was designed to be used by a trained and accredited assessor whom is registered to assess this specific unit standard as per the requirements of the AgriSETA ETQA.

Prior to the delivery of the program the facilitator and assessor must familiarise themselves with content of this guide, as well as the content of the relevant Learner Workbook.

The assessor, facilitator and learner must plan the assessment process together, in order to offer the learner the maximum support, and the opportunity to reflect competence.

The policies and procedures that are required during the application of this assessment are available on the website of the AgriSETA and should be strictly adhered to. The assessor must familiarise him/herself with this document before proceeding.

This guide provides step-by-step instructions for the assessment process of:

Title: Work with a range of patterns and functions and solve problems
US No: 9007 NQF Level: 2 Credits: 3

This unit standard is one of the building blocks in the qualification listed below. Please mark the qualification you are currently assessing, because that will be determined by the context of application:

Title	ID Number	NQF Level	Credits	Mark
National Certificate in Animal Production	48976	2	120	<input type="checkbox"/>
National Certificate in Mixed Farming Systems	48977	2	120	<input type="checkbox"/>
National Certificate in Plant Production	48975	2	120	<input type="checkbox"/>

Please mark the learning program you are enrolled in:

Are you enrolled in a:	Y	N
Learnership?	<input type="checkbox"/>	<input type="checkbox"/>
Skills Program?	<input type="checkbox"/>	<input type="checkbox"/>
Short Course?	<input type="checkbox"/>	<input type="checkbox"/>

Note to Assessor:

If you are assessing this module as part of a full qualification or learnership, please ensure that you have familiarized yourself with the content of the qualification.

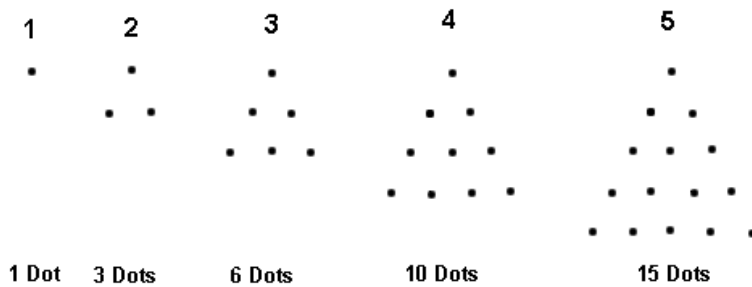
1
SO 1 AC 1

Instructions to learner:
 Answer all the questions below

Learner Guide: Page 14 Facilitator Guide: Page 11

1. Work out the next 5 terms in the number sequences below and explain your calculation using 'n' as your first term:

Model Answer(s):
 a) 297; 290; 276; 255; 227; 192; 150; 101; 45
 b) 1; 10; 100; 1000; 10 000; 100 000; 1 000 000; 10 000 000
 c) 3; 9; 81; 243; 729; 2187; 6561; 19683
 d) 1; 4; 9; 16; 25; 36; 49; 64; 81
 e) 25; 26; 28; 31; 35; 40; 46; 53; 61

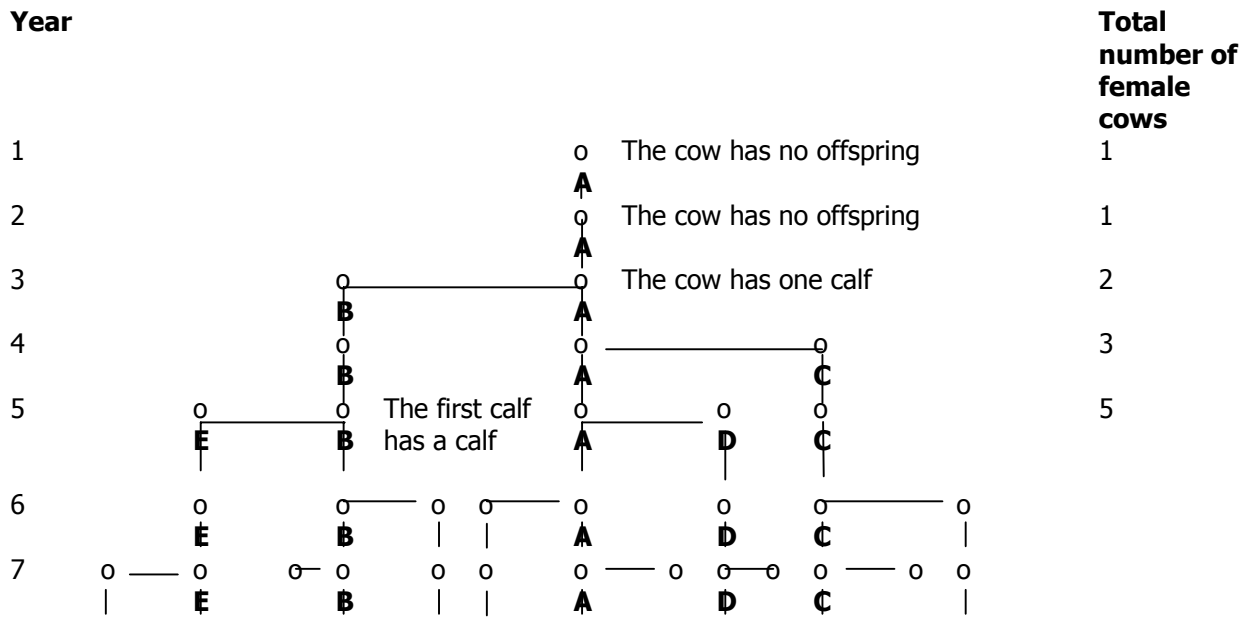


2. Write down the sequence of the numbers of dots. Work out the next three terms and explain in words how you got the answer.

Model Answer(s):
 1 ; 3 ; 6 ; 10 ; 15 ; 21 ; 28 ; 36 ;
 You add 2 to the first term, You add 3 to the second term, You add 4 to the third term etc

3. If a cow produces its first she-calf at age two years and after that produces another single she-calf every year, how many she-calves are there after 12 years, assuming none die? This is not as simple as it looks. To solve this problem you need to draw up a diagram:





In year one the cow **A** has no offspring. In year two the cow has no offspring. In year three the cow has a calf **B**. In year 4 the cow has another calf **C**. In year 5 the cow has another calf **D**, but the first calf **B** also has her own calf **E**. And so on.

a How many cows will there be in years 6 and 7?

Model Answer(s):
Year 6 has 8 cows, year 7 has 13 cows

b Write the total number of cows as a sequence.

Model Answer(s):
1; 1; 2; 3; 5; 8; 13

c Determine the number pattern. Hint: It is called the Fibonacci Series.

Model Answer(s):
Each term is the sum of the previous two terms.

d Copy and complete the table below

Model Answer(s):

Year	1	2	3	4	5	6	7	8	9	10	11	12
Total number of cows	1	1	2	3	5	8	13	21	34	55	89	144

e Do some research to find two other examples in nature where the Fibonacci series occurs.

Model Answer(s):
The number of petals per whorl of flowers
The number of segments per turn in the spiral shell of a snail
Etc

2

SO 2 AC 2

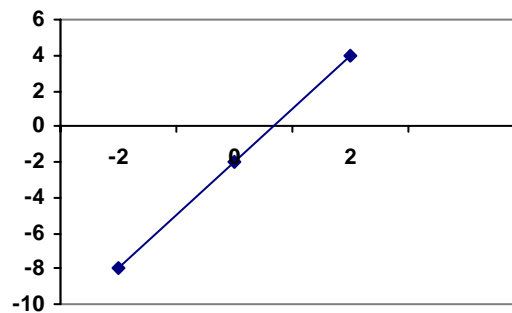
Instructions to learner:

Answer all the questions below

Learner Guide: Page 27 Facilitator Guide: Page 12

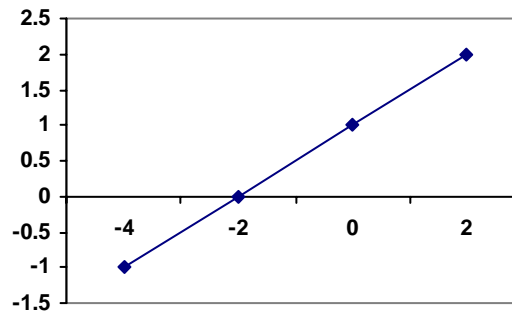
1. Draw the following straight line graphs on a Cartesian Plane.

a $y = 3x - 2$

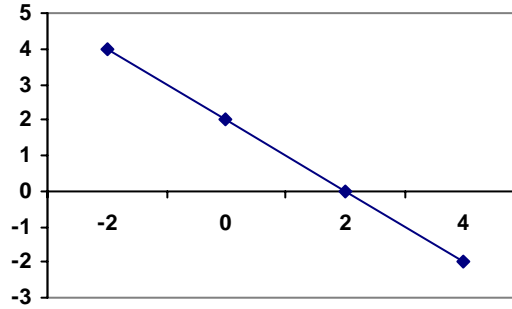


b $4y = 2x + 4$

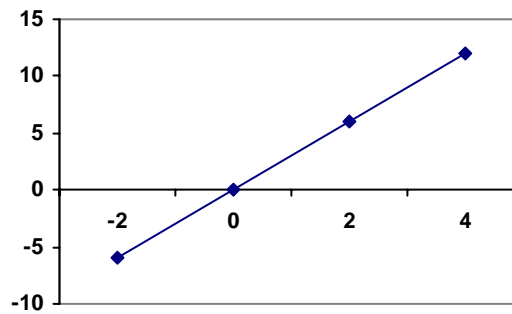
$y = \frac{x}{2} + 1$



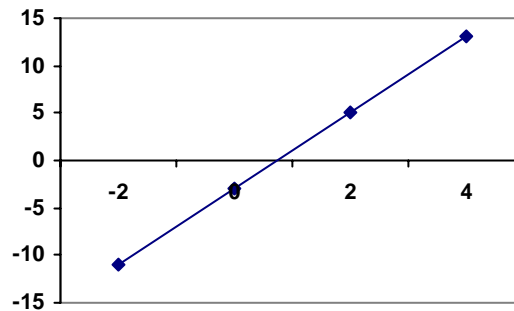
c $2x + 2y = 4$
 $2y = -2x + 4$
 $Y = -x + 2$



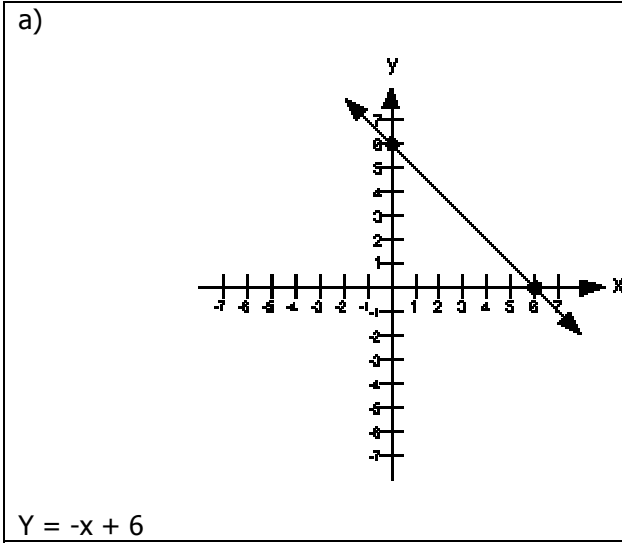
d $y = 3x$



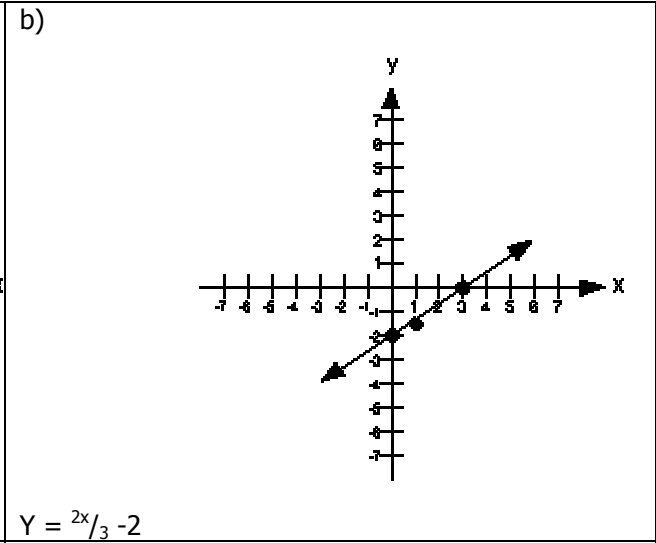
e $2y = 8x - 6$
 $y = 4x - 3$



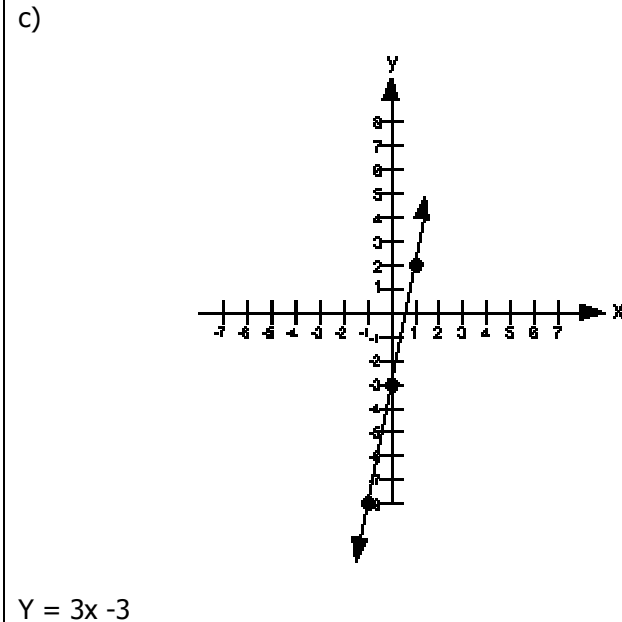
2. Determine the equations of the following straight line graphs.



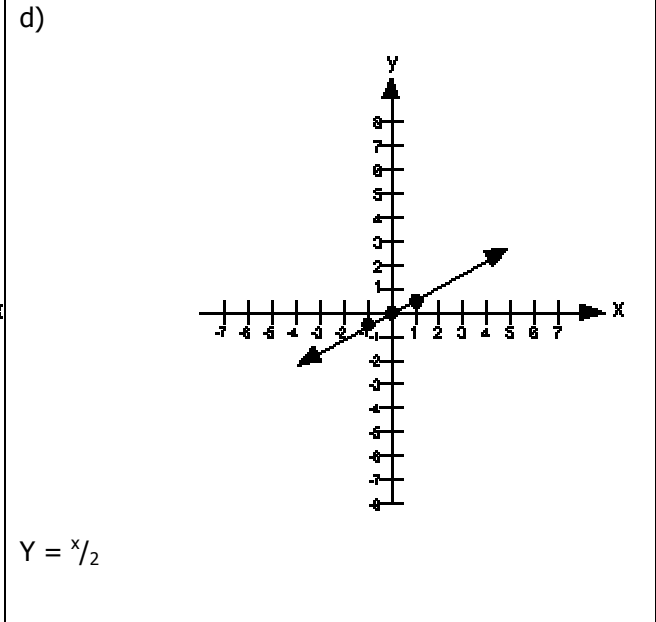
$Y = -x + 6$



$Y = \frac{2x}{3} - 2$



$Y = 3x - 3$



$Y = \frac{x}{2}$

My Notes ...

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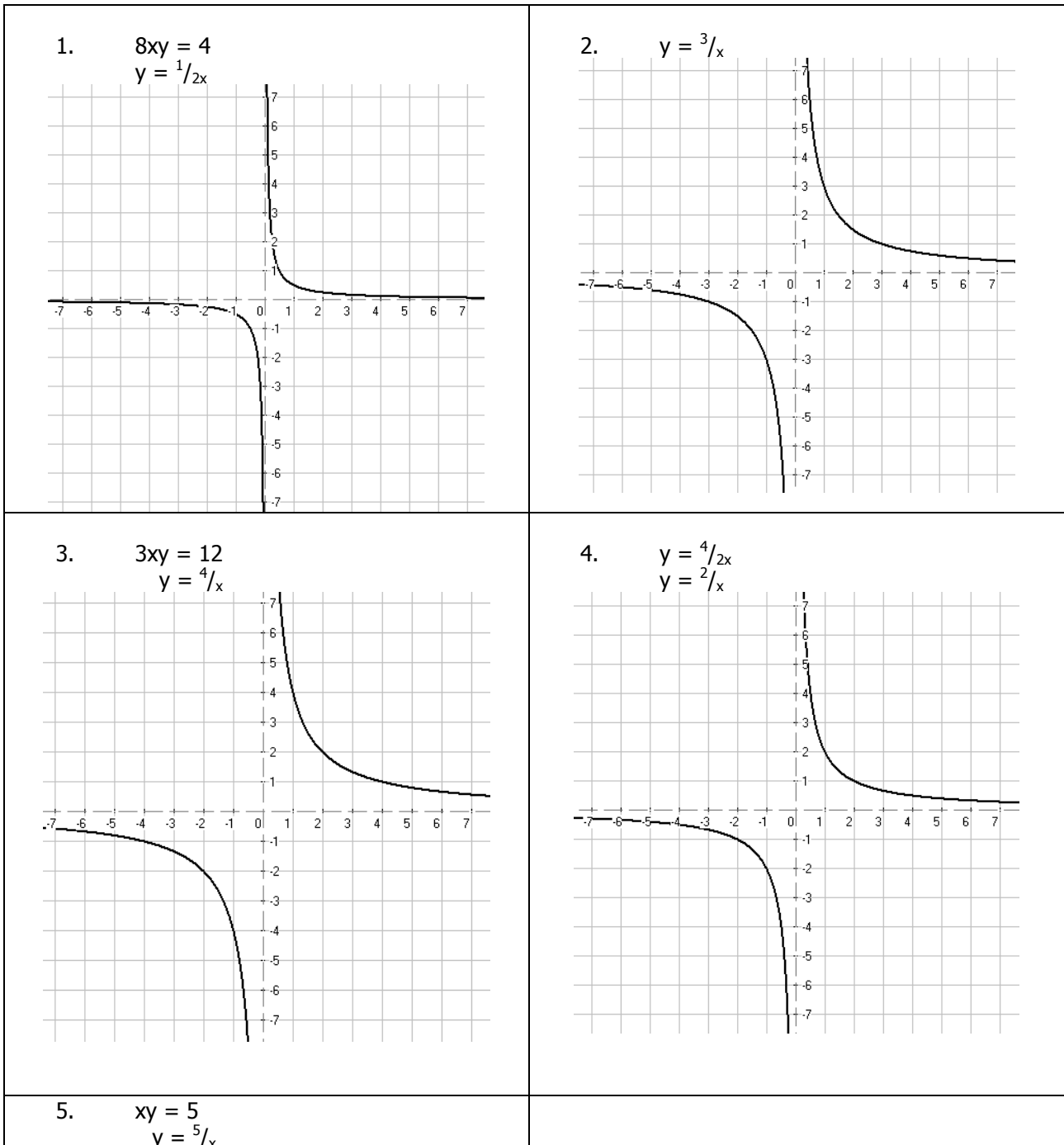
SO 3 AC 3

Instructions to learner:

Answer the following questions

Learner Guide: Page 46 Facilitator Guide: Page 14

Draw the graphs representing the functions of the hyperbola on a Cartesian plane



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SO 3 AC 4

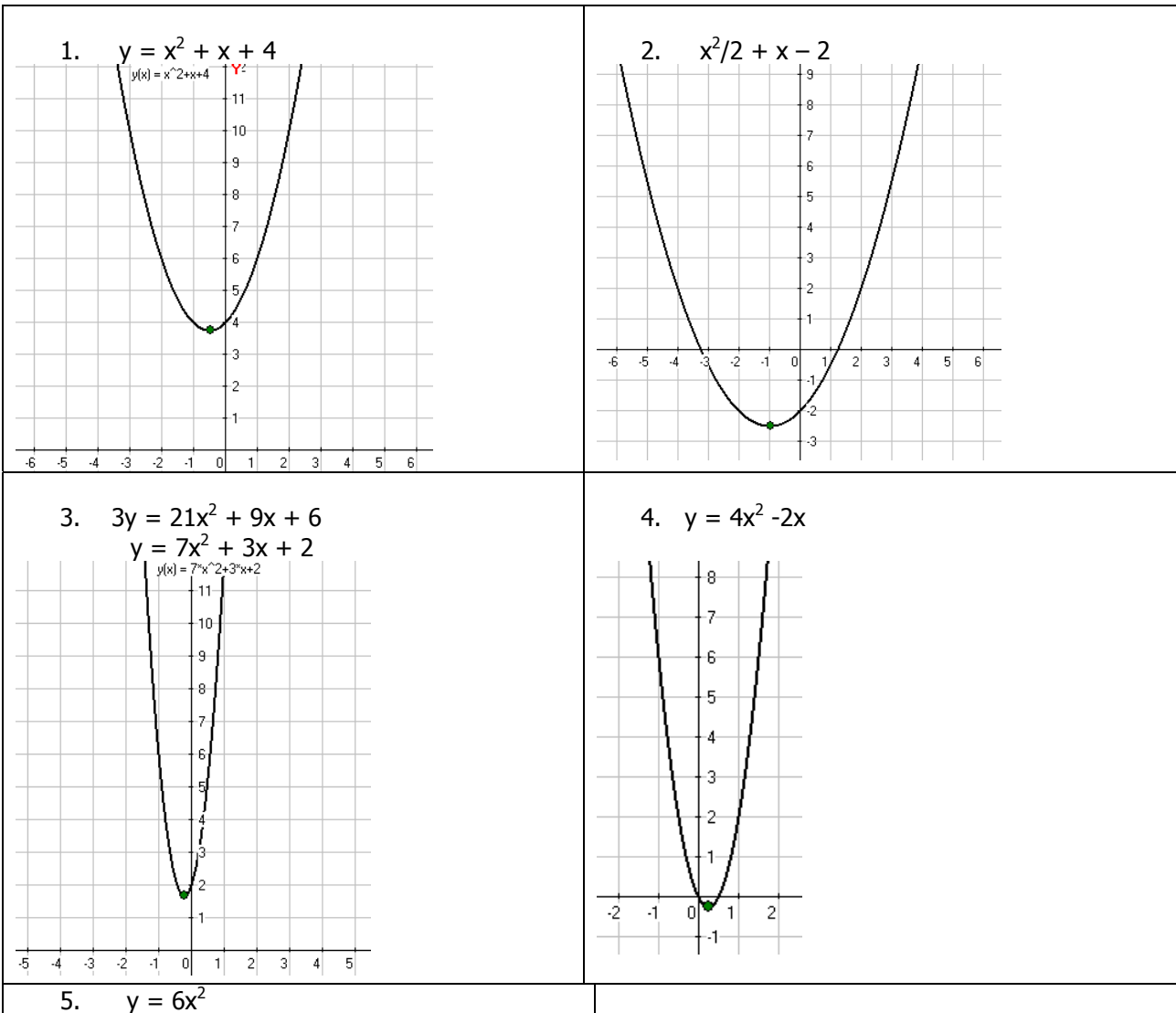
Instructions to learner:

Answer all the questions below.

Learner Guide: Page 48 Facilitator Guide: Page 14

1. Draw the parabola for the following graphs on a Cartesian plane:

- a $x^2 + x + 4$
- b $x^2/2 + x - 2$
- c $3y = 21x^2 + 9x + 6$
- d $y = 4x^2 - 2x$
- e $y = 6x^2$



5

SO 3 AC 5

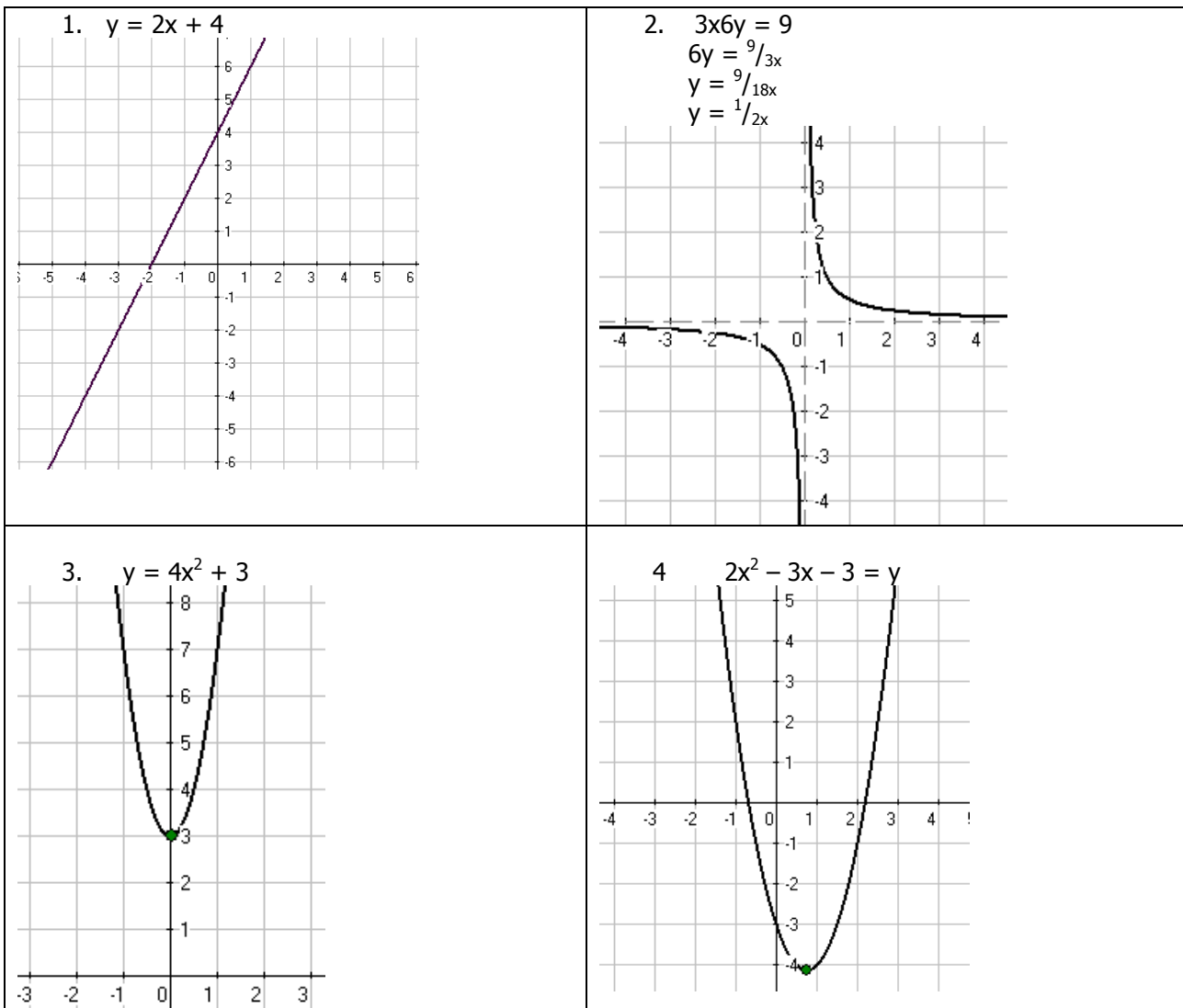
Instructions to learner:

Answer the following questions

Learner Workbook: Page 50 Facilitator Guide: Page 14

1. Draw the following graphs on the same Cartesian plane

- a $y = 2x + 4$
- b $3x6y = 9$
- c $y = 4x^2 + 3$
- d $2x^2 - 3x - 3 = y$



2. Complete the following three number patterns by writing the next three terms, and then write the sequence as an "n" value of the first term.

a 56; 112; 168; ...

Model Answer(s):
Add 56 each time, so 56; 112; 168; 224; 280; 336
 $56 + 56n$

b 1 594 323; 531 441; 177 147;

Model Answer(s):
Divide each term by 3 to obtain the next term, so
1 594 323; 531 441; 177 147; 59049; 19683; 6561
 $1594\ 323/3n \quad n > 1$

c 1; 8; 27; 64; ...

Model Answer(s):
The sequence is $1^3; 2^3; 3^3$ etc So, 1; 8; 27; 64; 125; 216; 343
 $n^3 \quad n > 1$

My Notes ...

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Summative Test and Attitude & Attribute Evaluation

Before the knowledge test is undertaken, the learner must be reminded of what is expected from him / her in terms of summative and reflexive competence. Read and explain to the learner, the **Preparation for Your Final Assessment** section in the learner workbook. Learners and assessor should sign off this section to acknowledge that this step was completed.

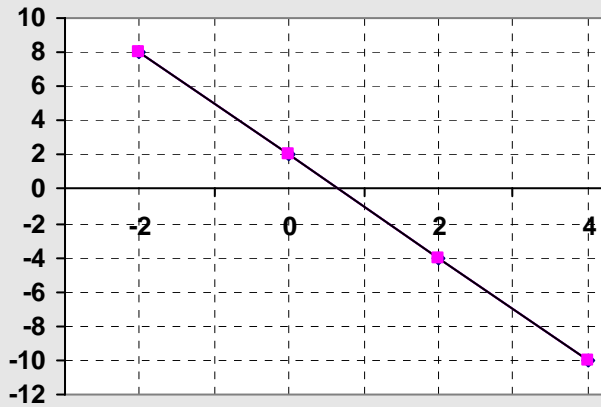
Please set up a knowledge test from the questions given as a guideline to learners and supply each learner with a test sheet.

Supply each report with the following heading:

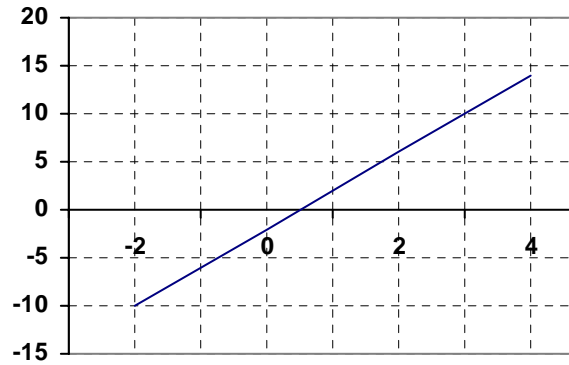
Unit Standard:	9007	NQF Level:	2
Learner Name:			

Questions	Model Answers
<p>1. Complete the following number series by writing next three numbers</p> <p>a 2; -4; 8; -16 ...</p> <p>b 1; 6; 11;</p> <p>c 1; 2; 4; 8;</p> <p>d 144; 121; 100; 81;</p> <p>e 1; 1; 2; 3; 5;</p> <p>(5x1 = 5)</p>	<p>a) 2; -4; 8; -16; 32; -64; 128</p> <p>b) 1; 6; 11; 16; 21; 26</p> <p>c) 1; 2; 4; 8; 16; 32; 64; 128</p> <p>d) 144; 121; 100; 81; 64; 49; 36</p> <p>e) 1; 1; 2; 3; 5; 8; 13; 21</p> <p>(5x1 = 5)</p>

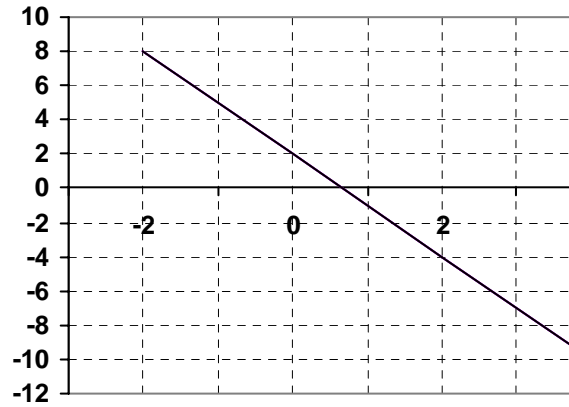
- 2 a) Draw the graph of $y = 4x - 2$
(5)
2 b) Find the equation of the graph below
(5)



- 2 a) Draw the graph of $y = 4x - 2$
(5)



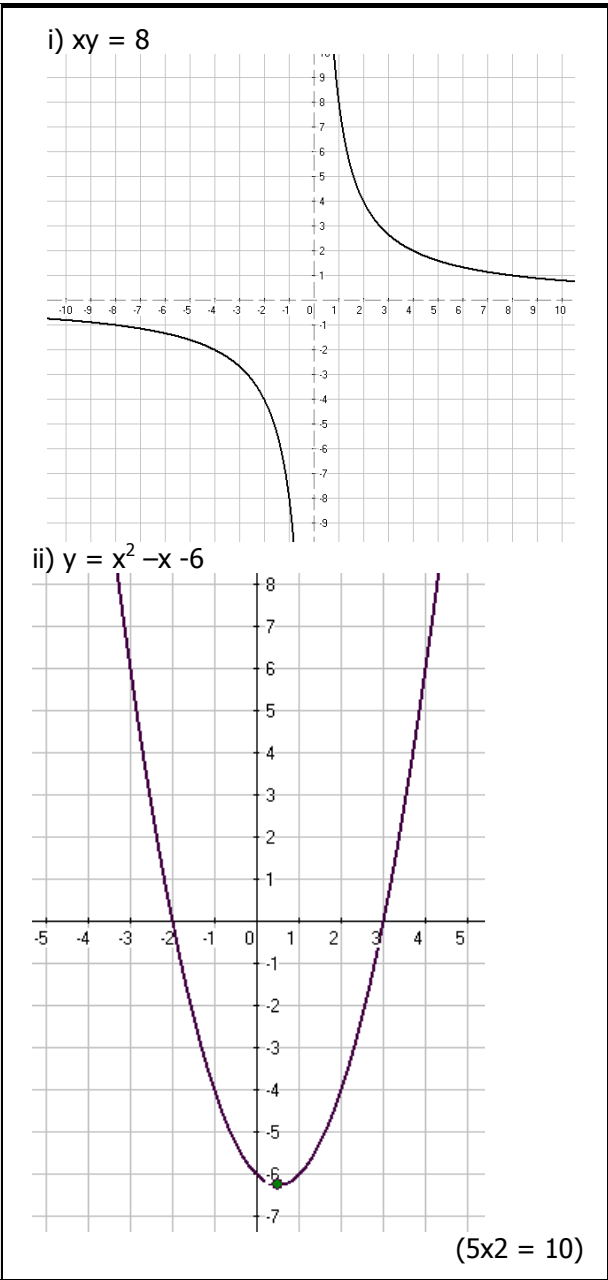
- 2 b) Find the equation of the graph below



$y = -3x + 2$ (5) (10)

3 a) Draw the equations of the following two graph the same set of axes:

i) $xy = 8$ ii) $y = x^2 - x - 6$
 (5x2 = 10)



2 A farmer monitors the growth of a particular calf by recording its mass over time. He finds the following results:
 At one month the calf had a mass of 25 kg. A month later the calf weighed 50kg. By month three the calf had gained 25kg compared to month two. By month four the calf weighed 100kg.

a record the farmers results in a suitable table. (5)

b draw a graph to show the results (5)

(10)
Total: 35

a) record the farmers results in a suitable table. (5)

Table showing mass of calf in kg over 4 months

Month	1	2	3	4
Mass in kg	25	50	75	100

b) draw a graph to show the results (5)

Graph showing mass of calf (kg) over four months

(10)
Total: 35

Assessment Feedback Form

Comments / Remarks	
Feedback to learner on assessment and / or overall recommendations and action plan for competence:	
Feedback from learner to assessor:	
<p>Assessment Judgement You have been found:</p> <p style="margin-left: 20px;"> <input type="radio"/> Competent <input type="radio"/> Not yet competent in this unit standard </p>	<p>Actions to follow:</p> <p style="margin-left: 20px;"> <input type="radio"/> Assessor report to ETQA <input type="radio"/> Learner results and attendance certification issued </p>
<p>Learner's Signature:</p>	<p>Date:</p>
<p>Assessor's Signature:</p>	<p>Date:</p>
<p>Moderator's Signature:</p>	<p>Date:</p>