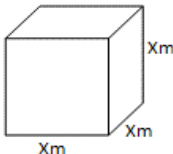
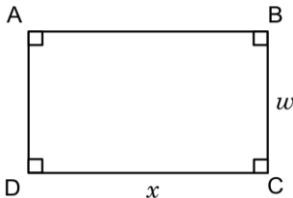
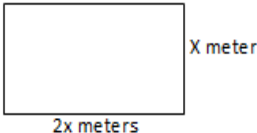
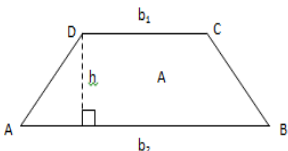
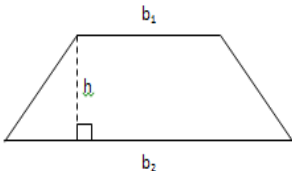
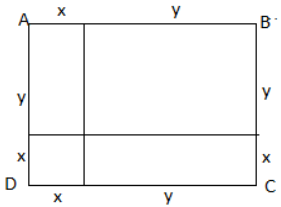


S.N.	Competency No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
1	10	K	Which one of the following is an algebraic expression?		$4x - 5 = 36$	$x+10<10$	$x+4>3x+10$	$9x+4+5x$	D
2	10	K	From the given algebraic expressions, which one is monomial?		$y-6$	-6	x^2+4xz	$\sqrt{x} - \sqrt{y}$	B
3	10	K	Which pair is unlike terms?		-2yz and -3zy	$8x^3$ and $12x^3$	$6p^3q^2$ and $4p^2q^3$	$4x^2y$ and $2yx^2$	C
4	10	K	What is the square of $6a$?		$6a^2$	6^2a	$12a^2$	$36a^2$	D
5	10	K	The sum of a number (n) and 6 is 32. Which equation shows this relation?		$6+n=32$	$32n=6$	$6-n=32$	$32+n=6$	A
6	10	K	Semira has 5 more birr than Abebe. If Abebe has P birr, which expression represents Semira's amount?		$P-5$	$P+5$	$5-P$	$5P$	B
7	10	K	Five more than half of a number is _____.		$\frac{x+5}{2}$	$\frac{x-5}{2}$	$x+5$	$\frac{x}{2}+5$	D
8	10	K	The cube of a number decreased by 3 is _____.		x^3+3	x^3-3	x^3+a	x^3-a	B
9	10	K	The difference between a mother's age (x) and her son (y) is 25. Which one is the correct relationship between x and y?		$x+y=25$	$y-x=25$	$x-y=25$	$x-2y=25$	C

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
10	10	K	The perimeter of a rectangular field with sides x and x+2 is _____.		$4(x+1)$	$2(x+2)$	x^2+2x	$2x^2+4x$	A
11	10	K	What is the length (l) of a rectangle if it is six less than twice the width(w)?		$2w+6$	$2w-6$	$6w+2$	$6w-2$	B
12	10	K	The perimeter of a rectangular field is 200 m. If the length is y and width x, find the width x in terms of y.		$x = 200 - y$	$x = 100 - y$	$x = 50 + y$	$x = 50 - y$	B
13	10	K	The sum of two consecutive even natural numbers divided by three is equal to 6. Which of the following is the correct representation of the statement?		$\frac{n+2}{3} = 6$	$\frac{2n+2}{3} = 6$	$\frac{2n+1}{3} = 6$	$\frac{n+1}{3} = 6$	B
14	10	K	Evaluate $\left(\frac{2a^2+b}{4}\right)\left(\frac{1}{4a+2b}\right)$ where a=1 and b= -1		-1/8	1/8	8	-8	B
15	10	K	The simplified form of $\left(\frac{4a^2b}{2c}\right)(-2ab)$ where a=-2 b=1 and c=4 is:		-8	8	12	16	B
16	10	A	Abebe went to a shop to buy 6 packets of chewing gum of the same kind with 3 birr each. He has 50 birr at hand. What is the expression that shows the change (C)?		$C = (6 \times 3) + 50$	$(6 \times 3) - C = 50$	$C = 50 - (6 \times 3)$	$C - (6 \times 3) = 50$	C

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
17	10	A	Desie bought 5 shirts and 4 ties. The cost of a tie is 10 birr and the cost of a shirt is 15 birr. Which equation can be used to find the total cost (c) of the 5 shirts and 4 ties?		$c=5 \times 15 + 4 \times 10$	$c=5 \times 10 + 4 \times 15$	$c=5 \times 4 + 10 \times 15$	$5 \times 5 + 4 \times 4$	A
18	10	A	How much water is needed to fill a plastic cube with length of sides x m?		$3x^3 \text{ m}$	$x \text{ m}^3$	$x^3 \text{ m}^3$	$x^3 \text{ m}$	C
19	10	A	ABCD is a rectangular field whose perimeter is 30m. If the length is given as x in the figure below, express the width in terms of x.		$w=15-x$	$w=15+x$	$w=30-x$	$w=30+x$	A
20	10	A	Each side of a square measures $(3k+5)$ units. Which of the following expresses the perimeter?		$3k+9$	$7k+9$	$12k+5$	$12k+20$	D
21	10	A	The perimeter of the rectangle shown at the right is $8a+4b$. The width of the rectangle is $2a-2b$. Which of the following expressions represents the length of the rectangle?		$2a$	$2a+4b$	$4a+2b$	$6a+6b$	B
22	10	A	Almaz squared a number 'x' and increased the result by 12. The correct algebraic expression is _____.		$(x+12)^2$	x^2-12	$2x+12$	x^2+12	D

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
23	10	A	A volleyball field is shaped like a rectangle. It has a width of x meters and a length of 2x meters. Which expression gives the area of the field?		3x square meters	6x square meters	$2x^2$ square meters	$3x^2$ square meters	C
24	10	A	If $mgh + 5h^2 = 5h$, find the value of m in terms of g and h.		$m = \frac{1-h}{g}$	$m = \frac{5(1-g)}{h}$	$m = \frac{5(g-1)}{h}$	$m = \frac{5(1-h)}{g}$	D
25	10	A	The parallel sides of a trapezium are b_1 and b_2 units long. Its area is A square units. What is its height (h) in terms of area (A) and bases?		$h = \frac{b_1 + b_2}{2A}$	$h = \frac{2(b_1 + b_2)}{A}$	$h = \frac{A}{2(b_1 + b_2)}$	$h = \frac{2A}{b_1 + b_2}$	D
26	10	A	From a given trapezium below, $A = (b_1 + b_2)h/2$. b_2 is expressed in terms of the other variables in the formula for A(area) is _____.		$b_2 = \frac{2A}{h} - b_1$	$b_2 = \frac{2A}{h}$	$b_2 = 2A - b_1$	$b_2 = \frac{2A}{h} - b_1$	D
27	10	A	Which algebraic expression describes the area of the square ABCD?		$x^2 + 2xy + y^2$	$x^2 - 2xy + y^2$	$x^2 - xy + y^2$	$x^2 + 4xy + y^2$	A

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
28	10	A	Dividing a number by 3 and adding 5 to the result give 12. Which of the following equations matches the statement?		$5=12+n/3$	$n/3 +5=12$	$3/n= 5$	$\frac{n+5}{3} = 12$	B
29	10	A	The lengths of the sides of a triangle are consecutive odd integers. If the perimeter of the triangle is 27cm, what are the lengths of the sides?		9, 9, and 9	7, 9, and 11	8, 9, and 10	5, 7 and 15	B
30	11	K	For $x=12$, $5(x-36)=$ _____.		-120	24	36	120	A
31	11	K	For $c=4$, $9c^2=$ _____.		324	144	72	36	B
32	11	K	If $a=2$, $b=3$, then what is the value of $\frac{4a+2b}{2a}$?		14/2	7/2	7/4	14/6	B
33	11	K	$a-(b-c)=$ _____.		$-ab+ac$	$a-b-c$	$a-b+c$	$a+b+c$	C
34	11	K	The simplified form of $a(b+c) -ac$ is _____.		ab	$ab-ac$	bc	$ab + ac$	A
35	11	K	What is the product of $4a$ and $2ab$?		$4a/2ab$	$2ab/4a^2$	$8a^2b$	$2a(b+2)$	C
36	11	K	Which one of the following is true for any three rational numbers x , y , and z ?		$-x-(y-z)=-x-y-z$	$x-(y+z)=x-y-z$	$x-(y-z)=x-y-z$	$x+(y-z)=x+y+z$	B
37	11	K	The simplified form of $x + (-x) + r$ is _____.		$2x + r$	r	$-xr + x$	$xr + x$	B

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
38	11	K	Simplify $(3x+7y)+(2x-5y)$.		$5x+2y$	$5x+12y$	$5x-2y$	$5x-12y$	A
39	11	K	The simplified form of the expression $2x - 3(8x - 3) + 20x$ is _____.		$2x - 9$	$46x - 9$	$-2x + 9$	$-4x - 9$	C
40	11	K	The simplest form of $3x + 4(7x + 5)$ is _____.		$31x + 5$	$31x + 20$	$25x + 20$	$11x + 9$	B
41	11	K	The simplified form of $2x - 5(3x + 2)$ is _____.		$-13x + 2$	$-13x - 10$	$-23x$	$-13x + 10$	B
42	11	K	Which expression is equivalent to the expression $2(4x + 2y) - 3(x + y) + 2(x - y)$?		$7x$	$7x - y$	$7x - 5y$	$7x + y$	B
43	11	K	$2x-(8x-6w-6)-6w$ equals to _____.		$6(w-1)$	$6(x-1)$	$6(1-w)$	$6(1-x)$	D
44	11	K	Simplify $4(3a+b)-3(a+2b) =$ _____.		$15a-10b$	$15a+10b$	$9a-2b$	$9a+10b$	C
45	11	K	Simplified form of $3(2m+5n)+4(3m-2n)$ is _____.		$18m+23n$	$18m+7n$	$18m+3n$	$18m+7$	B
46	11	K	The simplified form for $(2x-3)-(3x-9)+6$ is _____.		$-4-x$	$12-x$	$5x-16$	$5x-4$	B
47	11	K	The simplified form of $5(x+1)-3(x-2)$ is _____.		$2x-1$	$8x-1$	$2x+11$	$8x+11$	C

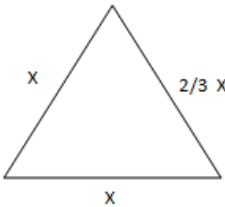
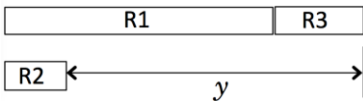
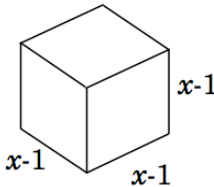
S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
48	11	K	The simplified form of $(2x-5y)-(3y+7x)-4y$ is _____.		$-5x-2y$	$-5x-12y$	$9x-2y$	$9x-8y$	B
49	11	K	The simplified form of $4(x-1)+3(x+2)=5(x-4)$ is _____.		-12	-11	10	11	B
50	11	K	When the expression $5k-(5k-[2k-(4k-8k)])$ is simplified, it gives _____.		-6k	-4k	4k	6k	D
51	11	K	What is the simplified form of $3x-5[(2x+1)-(4-x)]$?		$2x-15$	$15-2x$	$12x-15$	$15-12x$	D
52	11	K	The simplified form of $x/3 - [(x/5 + 1) - x]$ is _____.		$\frac{2}{15}x$	$\frac{17}{15}x - 1$	$\frac{-7}{15}x - 1$	$\frac{17}{15}x + 1$	B
53	11	K	The simplified form of $-19b^2a+9+14ab^2-3$ is _____.		ab^2+1	$-5ab^2+6$	$5ab^2+6$	$-5ab^2-6$	B
54	11	K	$x^2-8y^3+2x^2+5y^3$ equals to _____.		$3(xy)^2$	$3(xy)^3$	$3(x^2-y^3)$	$3(x^3-y^2)$	C
55	11	K	$(4x^2-2x+8)-(x^2+3x-2)=$ _____.		$3x^2+x+6$	$3x^2+x+10$	$3x^2-5x+6$	$3x^2-5x+10$	D
56	11	K	What is the simplified form of the following equation? $0 + \left[\frac{-2x^2}{2} \right] + 2x^2 + 10$		$-2x^2/2 + 2x^2 + 10$	$10 + x$	$x^2 + 10$	$-1/2x + 10$	C

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
57	11	K	For a, b, and c≠0, simplify $\left(\frac{4ab^3}{2bc}\right)\left(-\frac{1}{2ab}\right)(ab)$		$\frac{-ab^2}{c}$	$\frac{ab^2}{c}$	$\frac{ab^3}{2c}$	$\frac{-ab}{2c}$	A
58	11	K	Which one of the following is the simplest form of $3x + (-6x/2) + (-12x/2)$?		$\frac{6x - 6x - 12x}{12}$	12x	-6x	-3x - (12x/2)	C
59	11	K	Simplify $\left(\frac{xy}{4} + \frac{3}{4}xz\right) + \left(\frac{3}{4}xy + \frac{xz}{4}\right)$		x(y+z)	y(x+z)	z(x+y)	$\frac{(x+z)y}{4}$	A
60	11	K	The simplified form of $\frac{5x^3}{10x^7}$ is:		$2x^4$	$\frac{1}{2x^4}$	$\frac{1}{5x^4}$	$\frac{x^4}{5}$	B
61	11	K	The simplified form of $\frac{6x+18}{6}$ is _____.		x+3	x+2	6	3	A
62	11	K	What is $\frac{12a^3 - 20a^2}{16a^2 + 8a}$ reduced to lowest term?		a/2	$\frac{3a-5}{2a+1}$	$\frac{2a}{4+2a}$	$\frac{a(3a-5)}{2(2a+1)}$	D
63	11	A	If x≠0, the quotient of $(15x^2 + 30xy) \div 5x$ is _____.		9xy	90y	$\frac{3x+6y}{5x}$	3x + 6y	D

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key								
64	11	A	Evaluate values from the table into the expression and simplify $\frac{a+bc^2}{d} = \underline{\hspace{2cm}}$ <table><tr><td>a</td><td>b</td><td>c</td><td>d</td></tr><tr><td>4</td><td>5</td><td>6</td><td>2</td></tr></table>	a	b	c	d	4	5	6	2		72	82	92	94	C
a	b	c	d														
4	5	6	2														
65	11	A	Solve the value of Z, if x=3 and y=1. $z = \sqrt{(x-2)^2 - (y-2)^2}$		0	1	2	4	A								
66	11	A	Add 7 to x, double what you get, then subtract 3 from the result. The simplified form of this expression is _____.		2x+14	2x+11	x+11	2x-11	B								
67	12	A	A 12 meter rope is to be cut into two pieces so that the longer piece is 3 times the shorter. Find the length of the shorter rope.		3 meter	4 meter	6 meter	9 meter	A								
68	12	A	The sum of two consecutive odd integers is 20. Then find the two numbers.		7 and 13	5 and 15	9 and 11	3 and 17	C								
69	12	A	The sum of two consecutive odd integers is 44. Find the integers.		13 and 31	11 and 33	21 and 23	5 and 39	C								
70	12	A	If the sum of two consecutive even integers is 90, what are the integers?		40 and 50	45 and 45	44 and 46	42 and 48	C								

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
71	12	A	The sum of three consecutive integers is 63. What is the smallest of the three integers?		21	20	19	18	B
72	12	A	If the sum of three consecutive intergers is 153, then what are the integers?		47, 52 and 54	48, 51 and 54	49, 50 and 54	50, 51 and 52	D
73	12	A	The cost to rent a car is given by the expression $20x + 0.75y$, where x is the number of days and y is the number of kilometers. If Mr. Abedela rents the car for 6 days and drove 1200 kilometers, what will be the cost in birr?		920 birr	1,000 birr	1,020 birr	1,040 birr	C
74	12	A	Ahmed is 8 years older than Belete. Seada is 2 years younger than Belete. If the sum of the three ages is 36, how old is Belete?		8	9	10	12	C
75	12	A	The age of a mother is 20 years more than her daughter's age. What is the age of the mother when her daughter is 11 years old?		9	20	31	42	C
76	12	A	The father's and his son's ages are in the ratio of 5:2 now. If the age of the father at the time of son's birth was 18 years, then find the age of son.		18	16	15	12	D
77	12	A	The sum of two numbers is 45 and their difference is 25. What are the numbers?		20 and 25	35 and 10	30 and 15	40 and 5	B

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
78	12	A	The perimeter of a rectangular football playing field is 400m. If the length is given by a, then find the width in terms of a.		$400-2a$	$400-a$	$200-2a$	$200-a$	D
79	12	A	If the perimeter of a football field is 360m and the length is 40m longer than the width, what are the length and the width?		90m and 40m	110m and 70m	120m and 60m	150m and 10m	B
80	12	A	Ato Tolessa's monthly expenses in terms of x are; Birr x for house rent, Birr 2x for household and Birr $\frac{1}{4}x$ for recreation. How much does he spend for house rent if his salary is Birr 6500?		Birr 3,250	Birr 2,167	Birr 2,000	Birr 1,625	C
81	12	A	A shop keeper buys 25kg of Potato at Birr x per kg. If he sells 15kg at Birr $(x+1/2)$ per kg and the rest at Birr $(x+2)$ per kg, how much did he profit?		Birr 17.50	Birr 25.00	Birr 27.50	Birr 37.50	C
82	12	A	A 120 meter-long rope is cut into 3 pieces. The first piece of the rope is twice as long as the second piece of the rope. The third piece of the rope is three times as long as the second piece of rope. What is the length of the longest piece of rope?		20m	40m	60m	80m	C
83	12	A	If a, b and c are odd integers, which of the following expressions must be an even integer?		$a+b+c$	$a(b+c)$	$b(a+c)+ac$	$a(b+c-a)$	B

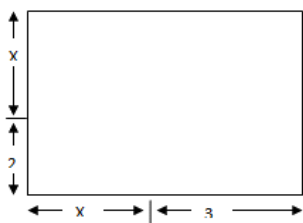
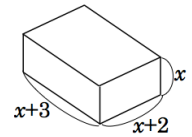
S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
84	12	A	The following isosceles triangle has 16cm perimeter. Then solve for x.		4cm	6cm	8cm	12cm	B
85	12	A	Three metal rods with lengths of $R1=x+4$, $R2=x-1$, and $R3=x$ are arranged as below. What is the length 'y'?		$x+3$	$x+5$	$2x+4$	$3x-3$	B
86	12	A	What is the volume of a cube shown below?		x^2-3x^2+3x-1	x^3-3x^2+3x-1	x^3+3x^2-3x-1	x^3+3x^2+3x-1	B
87	13	K	The product of $2x$ and $4x+3$ is _____.		$8x+6$	$8x+6x$	$8x^2+6$	$8x^2+6x$	D
88	13	K	Simplify the following product $(2ab^2)(2a-3b)$.		$4a^2b^2+6ab^2$	$4a^2b^2+6ab^3$	$4a^2b^2-6ab^3$	$4a^2b^2+2ab$	C
89	13	K	The product of $3x(2x^2-1)$ is _____.		$6x^2-3x$	$6x^2-1$	$6x^3-3x$	$6x^3-1$	C

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
90	13	K	The products of $3x(2y-4x)$ is _____.		$6xy-12x^2$	$5xy-7x^2$	$3xy-4x^2$	$2xy-3x^2$	A
91	13	K	The product of $(-4+2a)(-3ab^2)$ is _____.		$12ab^2+6a^2b^2$	$12ab^2-6a^2b^2$	$6a^2b^2-12ab^2$	$-3ab^2+2a$	B
92	13	K	The simplified form of $4x(y-x)-3y(x-y)$ is:		$-4x^2-3y^2+xy$	$-4x^2+3y^2+xy$	$4x^2+3y^2+7xy$	$4x^2-3y^2+xy$	B
93	13	K	The simplified form of $4(3x+y)+3(2x-5y)$ is:		$18x-11y$	$18x+11y$	$12x-4y$	$12x+4y$	A
94	13	K	Find the product of x^2 and $(xy)^3$.		$(xy)^5$	x^3y^5	x^5y^3	xy	C
95	13	K	The product of (x^3) and (xy^4) equals to _____.		x^3y^4	x^4y^4	x^4y^7	x^3y^7	B
96	13	K	The product of $(3x^4)$ and (y^2+x) is:		$3x^2y^2+3x^4$	$3x^4y^2+3x^5$	$3x^6y^2+3x^4$	$3x^8y^2+3x^5$	B
97	13	K	The product of $2x$ and $\frac{y+1}{2}$ is _____.		xy^2+x	x^2y+x	$xy+x$	$xy+y$	C
98	13	K	The product of $(\frac{3}{4}x^2)(2x+4)$ is _____.		$\frac{3}{2}x^2+4$	$2x^3+3$	$\frac{3}{2}x^3+3x^2$	$\frac{3}{2}x^3+4x^2$	C
99	13	A	The product of $6p^2$ and $9abp-6a^2bp$ is _____.		$54p^3-36p^3a^2b$	$54p^3ab-36p^3a^2b$	$54p^3a+36p^3a^2b$	$54p^3ab+36p^3a^2b$	B
100	13	A	The result of $\sqrt{2}x^2(\sqrt{8}x^3+\sqrt{2}x)$ is:		$16x^5+4x^3$	$4x^6+2x^2$	$4x^5+2x^3$	$4x^5+4x^3$	C

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
101	13	A	The length of a rectangular plot of land is x meters and its width is 3 meters less than the length. What is the area of the land?		$(x^2 - 3x)m^2$	$(x^2 - 3)m^2$	$(x - 2)^2m^2$	$(x^2 - 3x)m^2$	D
102	13	A	The length of a football field is P meters and its width is 30 meters less than the length. What is the area of the field in m^2 if P = 100 meters?		10000 m^2	9970 m2	9910 m2	7000 m2	D
103	13	A	The height (h) of a parallelogram is 6 less than its base (b). What is the area (A) of the parallelogram?		$6b^2 + b$	$6b^2 - b$	$b^2 + 6b$	$b^2 - 6b$	D
104	13	A	A rectangular assembly hall has a dimension of its length to its width is 2:3. The perimeter of the hall is 30 units. What is its area?		15sq. units	36sq. units	54sq. units	60sq. units	C
105	14	K	The product of $(3x+4)$ and $(2x-3)$ is _____.		$6x^2-x-12$	$6x^2+x-12$	$6x^2-x+12$	$6x^2-17x-12$	A
106	14	K	Multiply $(2x-18)$ by $(x+3)$.		$3x-15$	$2x^2-12x-54$	$2x^2-18x+54$	$2x-21$	B
107	14	K	The product of $(3x-2)(2x+6)$ is _____.		$6x^2+14x-12$	$6x^2+12x$	$6x^2+18x-12$	$6x^2-12$	A
108	14	K	The product of $(2x+1)(1-x)$ is _____.		$-2x^2-x+1$	$-2x^2+x-1$	$-2x^2+x+1$	$-2x^2+3x+1$	C
109	14	K	The equivalent algebraic expression of $(3a+2b)(2a-3b)$ is _____.		$-5a^2b^2$	$6a^2-6b^2$	$6a^2+13ab+6b^2$	$6a^2-5ab-6b^2$	D

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
110	14	K	Which of the following is the correct product of $(-3x + 2y)(3x - 2y)$?		$9x^2 - 4y^2 + 12xy$	$-9x^2 + 4y^2 + 12xy$	$-9x^2 - 4y^2 + 12xy$	$-9x^2 - 4y^2 - 12xy$	C
111	14	K	The product of $(x^2 - 5)$ and $(2x + 4)$ is _____.		$2x^3 + 4x^2 + 10x + 20$	$2x^3 + 4x^2 - 10x + 20$	$2x^3 + 4x^2 - 10x - 20$	$2x^3 + 3x^2 - 3x + 1$	C
112	14	K	Find $(5/4 + 3a/4)(2a + 3)$.		$5a^2/4 + 7a + 15/4$	$3a^2/2 + 14a/4 + 15/4$	$3a^2/2 + 19a/4 + 15/4$	$3a^2/2 + 14a/6 + 15/4$	C
113	14	K	Which one of the following is a product of $\left(\frac{x}{2} + \frac{x}{2}\right)\left(\frac{x}{2} - \frac{x}{4}\right)$		$\frac{-x^2}{2}$	$\frac{x^2}{2}$	$\frac{-x^2}{4}$	$\frac{x^2}{4}$	D
114	14	K	The product of $\frac{x}{4} + \frac{x}{4} - \frac{x}{2}$ is _____.		$\frac{-x}{8}$	$\frac{-x^2}{8}$	$\frac{x}{8}$	$\frac{x^2}{8}$	B
115	14	K	$(x+1)(x-1) =$ _____		$x^2 + 2x + 1$	$x^2 - 2x + 1$	$x^2 + 1$	$x^2 - 1$	D
116	14	K	What is the product of $(a+2)$ and $(a-2)$?		$a^2 + 4$	$4 - a^2$	$a^2 - 4$	$(a-2)^2$	C
117	14	K	Which one is the product of $(3x+3y)(3x-3y)$?		$9x^2 + 9y^2$	$9x^2 - 6y^2$	$9x^2 - 9y^2$	$9x^2 + 6y^2$	C

S.N.	Competency No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
118	14	K	When $(x/4 + x/2)$ is multiplied by $(x/4 - x/2)$ the result is _____.		$\frac{-3x^2}{8}$	$\frac{3x^2}{8}$	$\frac{-3x^2}{16}$	$\frac{3x^2}{16}$	C
119	14	K	Simplify $(a^2 - ab)(a^2 + ab)$.		$2a^2 - a^2b^2$	$2a^2 - ab$	$a^4 - ab$	$a^4 - a^2b^2$	D
120	14	K	What is the product of $3a - b$ and $b + 3a$?		$9a^2 - 6ab - b^2$	$9a^2 - b^2$	$3a^2 - 6ab - b^2$	$3a^2 - b^2$	B
121	14	K	If $A = (x + y)$ and $B = (2x^3 - y)$ then $AB =$ _____.		$2x^3 + x$	$2x^4 - y^2$	$2x^3y - xy$	$2x^4 + 2x^3y - y^2 - xy$	D
122	14	A	If $p^2 + q^2 = 25$ and $pq = 12$ then $(p + q)^2$ is _____.		5	24	37	49	D
123	14	A	If $a^2 + b^2 = 80$ and $(a - b)^2 = 16$ then what is the value of ab ?		12	24	32	64	C
124	14	A	If $ab = 12$ and $a^2 + b^2 = 25$, then what is the value of $(a - b)^2$?		1	13	37	49	A
125	14	A	If $(a + b) = 6$ and $(a - b) = -2$ then $a^2 - b^2 =$ _____.		-12	4	8	12	A

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
126	14	A	The figure to the right represents a rectangle with lengths of sides shown. What is its area if $x = 3$?		25	30	36	54	B
127	14	A	School A has a rectangular shape compound with length $x + 2$ and width $x - \frac{1}{2}$. What is the area (A) of the school compound?		$x^2 - \frac{1}{4}$	$x^2 + \frac{1}{4}$	$x^2 + \frac{3x}{2} - 1$	$2x^2 + \frac{3x}{2} + 2$	C
128	14	A	The length of a rectangular floor is x meters and its width is y meters. What will be area of the floor, if the length is increased by 3 meters and the width by 2 meters?		$(xy + 5xy + 6) \text{ m}^2$	$(xy + 2x + 3y + 5) \text{ m}^2$	$(xy^2 + 2x + 3y + 6) \text{ m}^2$	$(xy + 2x + 3y + 6) \text{ m}^2$	D
129	14	A	The total surface area of a box with sides x , $x+2$, and $x+3$ is _____.		$6x^2 + 20x + 12$	$8x^2 + 10x + 12$	$24x^2 + 20x + 12$	$6x^2 + 10x + 12$	A
130	14	A	The sum of two binomials is $5b^2 - 6b$. If one of the binomials is $3b^2 - 2b$, what is the other binomial?		$2b^2 - 4b$	$2b^2 - 8b$	$8b^2 + 4b$	$8b^2 - 8b$	A
131	15	K	Find the HCF of the numbers 24 and 18?		4	6	8	12	B

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
132	15	K	Find the highest common factor of the following terms: $2^3 3^2$ and $2^2 3^3$		24	18	36	72	C
133	15	K	The highest common factor of $3x^2$ and $9x$ is _____.		x^3	$3x^2$	$27x$	$3x$	D
134	15	K	What is the highest common factor of x^4 and $4x$?		x	x^2	x^3	x^4	A
135	15	K	What is the highest common factor of the expressions $15x^3$ and $5x$?		$5x$	$5x^2$	$5x^3$	5	A
136	15	K	The highest common factor of $8a^2$ and $12b^2$ is _____.		2	4	$2ab$	$4ab$	B
137	15	K	The highest common factor of $20x^3$ and $4x^2$ is _____.		1	$5x$	$4x^2$	$20x^3$	C
138	15	K	The highest common factor of the algebraic expressions of $6x^3$ and $9x^2$ is _____.		$3x$	$3x^2$	$6x$	$6x^2$	B
139	15	K	The highest common factor of $x^3/4$ and $x^5/6$ is _____.		$x/2$	$x^2/3$	$x^2/2$	$x^3/2$	D

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
140	15	K	Which one of the following is HCF of $6x$, $15x^2$ and $18x^3$?		$18x$	$15x$	$6x$	$3x$	D
141	15	K	Find the highest common factor of the following terms. $4x^3y$, $6xy^3$		$2x^2y$	$2xy$	$2xy^2$	$2x^3y^3$	B
142	15	K	Which of the following is the HCF of $4a^2x^2y^3$ and $8ax^3y^2$?		ax^2y^2	$2ax^2y^2$	$3ax^2y^2$	$4ax^2y^2$	D
143	15	K	Find the Highest Common Factor of $6ab^4c^3$ and $2a^4b^2c^2$.		$2ab^2c^2$	$2abc$	$2a^2b^2c^2$	$2a^4b^4c^3$	A
144	15	K	What is the highest common factor of $6a^2b^2$ and $15ab^2$?		$3ab^2$	$5a^2b^2$	$6a^2b^3$	$9ab^2$	A
145	15	K	The highest common factor of $27x^3y^2z$ and $9x^2y^5$ is _____.		$9x^2y^2$	$9x^2y^2z$	$27x^3y^5$	$27x^3y^5z$	A
146	15	K	Find the Highest Common Factor of $6ab^4c^3$ and $2a^4b^2c^2$.		$2ab^2c^2$	$2abc$	$2a^2b^2c^2$	$2a^4b^4c^3$	A

S.N.	Com- peten- cy No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
147	15	K	The highest common factor of $a^2\left(\frac{1}{19}ac\right)$ and $b^2c\left(\frac{3}{19}a\right)$		$\frac{a^2}{19}$	$\frac{b^2}{19}$	$\frac{3}{19}$	$\frac{ac}{19}$	D
148	15	K	Which of the following is the Highest Common Factor of $9x^2-3y$ and $3x+3y$?		-9	-3	3	9	C
149	15	K	The highest common factor of $8(m+5)$ and $-3n(m+5)$ is _____.		$8-3n$	$m+5$	$3mn$	$24n$	B
150	15	K	The highest common factor of $21a(a-3)$ and $7a^2(a-3)$ is _____.		$(a-3)$	$(3-a)$	$7a(a-3)$	$7a(3-a^2)$	C
151	15	A	The simplified form of $\frac{4^3 \cdot 2^3 \cdot \left(\frac{1}{2}\right)^4}{\left(\frac{1}{2}\right)^2}$ is _____. 		16	32	64	128	D
152	15	A	If LCM (x, 20)=60 and GCF (x, 20)=x-4, then what is the value of x?		6	10	30	40	A
153	16	K	Factorize $6x^2+3x$.		$3x(2x+1)$	$3x(2x-1)$	$3x(-2x-1)$	$3x(-2x+1)$	A
154	16	K	The expression $3a^2b^2+4a^3b^3$ is equivalent to:		$a^2b(3+4ab)$	$b^2(3a+4ab)$	$a^2b^2(3+4ab)$	$a^2b^2(3a+4ab)$	C

S.N.	Competency No.	Level (K or A)	Stem	Figure/Table	A	B	C	D	Key
155	16	A	The expression $a^2(a+2)-a(a+2)$ is equivalent to the expression:		$(a+2)(a-1)$	$a(a+1)(a-1)$	$a(a+2)(a-1)$	$a(a+2)(a+1)$	C
156	16	A	The expression $x^2(x+4)-x(x+4)$ is equivalent to the expression _____.		$(x+4)(x-1)$	$x(x+1)(x-1)$	$x(x+4)(x-1)$	$x(x+4)(x+1)$	C
157	16	A	Which pair of binomials are factors of x^2-1 ?		$(x+1)$ and $(x+1)$	$(x-1)$ and $(x-1)$	$(x+1)$ and $(x-1)$	$(x+1)$ and $(1-x)$	C
158	16	A	The factor form of $x^2 + x - 6 =$ _____.		$(x+3)(x-2)$	$(x+3)(x+2)$	$(x-3)(x-2)$	$(x+2)(x+1)$	A
159	16	A	Which one is a factor of $a^2-11a+24$?		$a+3$	$a-3$	$a+4$	$a-4$	B
160	16	A	Which is the factorized form of $3a^2-24ab+48b^2$?		$(3a-8b)(a-6b)$	$(3a-16b)(a-3b)$	$3(a-4b)(a-4b)$	$3(a-8b)(a-8b)$	C
161	16	A	If the area of a rectangle is given as $x^2 + 3x$ for $x>0$, what are the dimensions of the rectangle in terms of x ?		x^2 and $3x$	$x+3$ and $x+3$	x and $x+3$	x^2 and 3	C
162	16	A	Gebri's solution to an equation is shown below. given: $x^2+5x+6=0$ step 1: $(x+2)(x+3)=0$ step 2: $x+2=0$ or $x+3=0$ step 3: $x=-2$ or $x=-3$ Which property of rational numbers did Gebri use to move from step 1 to step 2?		Multiplication property of equality	Zero product property of multiplication	Communicative property of multiplication	Distributive property of multiplication	B