

Name :

HAA2.1

<b>Question 1</b> Simplify $\sqrt{224} + 2\sqrt{14}$	<b>Question 2</b> Simplify $\sqrt{896} + 6\sqrt{14}$	<b>Question 3</b> Find the coordinates of the vertex of the graph of $y = x^2 + 12x + 36$	<b>Question 4</b> Find the coordinates of the vertex of the graph of $y = x^2 - 6x$
<b>Question 5</b> Use the formula $v = u + at$ to find $a$ when $v = -4$ , $u = 16$ and $t = 10$	<b>Question 6</b> Use the formula $v^2 = u^2 + 2as$ to find $s$ when $v = 4$ , $u = 2$ and $a = 1$	<b>Question 7</b> Expand and simplify $(x + 2)(x + 3)(x + 1)$	<b>Question 8</b> Expand and simplify $(x - 1)(x + 2)(x - 3)$
<b>Question 9</b> Write down the exact value of $\tan 45^\circ$	<b>Question 10</b> Write down the exact value of $\sin 30^\circ$	<b>Question 11</b> A block has a mass of 480g and a volume of $80 \text{ cm}^3$ . Calculate the density.	<b>Question 12</b> A pressure of $10 \text{ N/m}^2$ results from a force of 140 N acting over an area $x$ . Find $x$
<b>Question 13</b> If $f(x) = 19 - x$ find the value of $f(0.5)$	<b>Question 14</b> If $f(x) = 30 - 4x$ find the value of $f(4)$	<b>Question 15</b> If the $n$ th term of a sequence is $\frac{3n+2}{7n}$ what is the 7th term?	<b>Question 16</b> If the $n$ th term of a sequence is $\frac{7n}{9n+5}$ what is the 8th term?
<b>Question 17</b> Work out $8 \times 10^3 \times 8 \times 10^5$	<b>Question 18</b> Work out $(1.8 \times 10^8) \div (3 \times 10^3)$	<b>Question 19</b> Solve simultaneously $6x + 6y = 60$ and $4x + 2y = 30$	<b>Question 20</b> Solve simultaneously $4x + 6y = 24$ and $2x + 2y = 10$

**SKILLS CHECK**

Score

Name :

HAA2.2

<b>Question 1</b> Simplify $\sqrt{686} + 4\sqrt{14}$	<b>Question 2</b> Simplify $\sqrt{150} + 4\sqrt{6}$	<b>Question 3</b> Find the coordinates of the vertex of the graph of $y = x^2 - 6x + 16$	<b>Question 4</b> Find the coordinates of the vertex of the graph of $y = x^2 + 4x + 5$
<b>Question 5</b> Use the formula $v = u + at$ to find $a$ when $v = 50$ , $u = 14$ and $t = 12$	<b>Question 6</b> Use the formula $v^2 = u^2 + 2as$ to find $v$ when $u = 10$ , $a = -2$ and $s = 24$	<b>Question 7</b> Expand and simplify $(x - 2)(x + 3)(x - 1)$	<b>Question 8</b> Expand and simplify $(x + 2)(x + 2)(x + 4)$
<b>Question 9</b> Write down the exact value of $\tan 0^\circ$	<b>Question 10</b> Write down the exact value of $\tan 60^\circ$	<b>Question 11</b> A block has a volume of $8 \text{ cm}^3$ and a density of $90 \text{ g/cm}^3$ . Calculate the mass.	<b>Question 12</b> A force of $117 \text{ N}$ acts over an area of $13 \text{ m}^2$ . What is the pressure?
<b>Question 13</b> If $f(x) = 20 + 3x^2$ find the value of $f(1)$	<b>Question 14</b> If $f(x) = 26 - 4x$ find the value of $f(2)$	<b>Question 15</b> If the $n$ th term of a sequence is $\frac{5n}{9n-1}$ what is the 12th term?	<b>Question 16</b> If the $n$ th term of a sequence is $\frac{4n}{7n}$ what is the 9th term?
<b>Question 17</b> Work out $8 \times 10^2 \times 6 \times 10^3$	<b>Question 18</b> Work out $(1.2 \times 10^7) \div (6 \times 10^5)$	<b>Question 19</b> Solve simultaneously $5x - 4y = 2$ and $3x - 4y = -2$	<b>Question 20</b> Solve simultaneously $x + y = 7$ and $3x - y = 9$

**SKILLS CHECK**

Score

Name :

HAA2.3

<b>Question 1</b> Simplify $\sqrt{250} + 6\sqrt{10}$	<b>Question 2</b> Simplify $\sqrt{486} + 5\sqrt{6}$	<b>Question 3</b> Find the coordinates of the vertex of the graph of $y = x^2 + 18x + 70$	<b>Question 4</b> Find the coordinates of the vertex of the graph of $y = x^2 - 10x + 30$
<b>Question 5</b> Use the formula $v = u + at$ to find $v$ when $u = 12$ , $a = 0.5$ and $t = 2$	<b>Question 6</b> Use the formula $v^2 = u^2 + 2as$ to find $a$ when $u = 5$ , $v = 10$ and $s = 5$	<b>Question 7</b> Expand and simplify $(x + 1)(x + 2)(x + 2)$	<b>Question 8</b> Expand and simplify $(x - 2)(x - 3)(x + 2)$
<b>Question 9</b> Write down the exact value of $\sin 90^\circ$	<b>Question 10</b> Write down the exact value of $\cos 30^\circ$	<b>Question 11</b> A block has a mass of 800g and a density of $100 \text{ g/cm}^3$ . Calculate the volume.	<b>Question 12</b> A pressure of $3 \text{ N/m}^2$ results from a force of 30 N acting over an area $x$ . Find $x$
<b>Question 13</b> If $f(x) = 22 - x$ find the value of $f(-2)$	<b>Question 14</b> If $f(x) = 21 - 2x$ find the value of $f(-4)$	<b>Question 15</b> If the $n$ th term of a sequence is $\frac{3n}{12n+1}$ what is the 7th term?	<b>Question 16</b> If the $n$ th term of a sequence is $\frac{5n}{7n+3}$ what is the 8th term?
<b>Question 17</b> Work out $6 \times 10^2 \times 4 \times 10^2$	<b>Question 18</b> Work out $(3.6 \times 10^4) \div (6 \times 10)$	<b>Question 19</b> Solve simultaneously $x + y = 9$ and $4x + 5y = 40$	<b>Question 20</b> Solve simultaneously $3x - 4y = -5$ and $4x - 6y = -10$

**SKILLS CHECK**

Score

Name :

HAA2.4

<b>Question 1</b> Simplify $\sqrt{192} + 8\sqrt{3}$	<b>Question 2</b> Simplify $\sqrt{72} + 5\sqrt{2}$	<b>Question 3</b> Find the coordinates of the vertex of the graph of $y = x^2 + 4x + 12$	<b>Question 4</b> Find the coordinates of the vertex of the graph of $y = x^2 + 2x + 6$
<b>Question 5</b> Use the formula $v = u + at$ to find $u$ when $v = -26$ , $a = -5$ and $t = 6$	<b>Question 6</b> Use the formula $v^2 = u^2 + 2as$ to find $v$ when $u = 8$ , $a = 4$ and $s = 10$	<b>Question 7</b> Expand and simplify $(x + 2)(x + 2)(x + 4)$	<b>Question 8</b> Expand and simplify $(x - 2)(x + 3)(x + 4)$
<b>Question 9</b> Write down the exact value of $\sin 45^\circ$	<b>Question 10</b> Write down the exact value of $\sin 0^\circ$	<b>Question 11</b> A block has a mass of 360g and a density of $60 \text{ g/cm}^3$ . Calculate the volume.	<b>Question 12</b> A pressure of $5 \text{ N/m}^2$ results from a force of 50 N acting over an area $x$ . Find $x$
<b>Question 13</b> If $f(x) = 3x + 7$ find the value of $f(1)$	<b>Question 14</b> If $f(x) = 25 + 2x^2$ find the value of $f(-2)$	<b>Question 15</b> If the $n$ th term of a sequence is $\frac{3n+1}{2n+1}$ what is the 10th term?	<b>Question 16</b> If the $n$ th term of a sequence is $\frac{7n-2}{7n}$ what is the 6th term?
<b>Question 17</b> Work out $6 \times 10^4 \times 6 \times 10$	<b>Question 18</b> Work out $(1.6 \times 10^9) \div (2 \times 10^3)$	<b>Question 19</b> Solve simultaneously $x + y = 5$ and $2x + 3y = 13$	<b>Question 20</b> Solve simultaneously $4x + 5y = 36$ and $4x + 2y = 24$

**SKILLS CHECK**

Score

Name :

HAA2.5

<b>Question 1</b> Simplify $\sqrt{891} + 9\sqrt{11}$	<b>Question 2</b> Simplify $\sqrt{48} + 7\sqrt{3}$	<b>Question 3</b> Find the coordinates of the vertex of the graph of $y = x^2 + 14x + 45$	<b>Question 4</b> Find the coordinates of the vertex of the graph of $y = x^2 + 12x + 44$
<b>Question 5</b> Use the formula $v = u + at$ to find $v$ when $u = 4$ , $a = -3$ and $t = 8$	<b>Question 6</b> Use the formula $v^2 = u^2 + 2as$ to find $a$ when $u = 10$ , $v = 2$ and $s = 6$	<b>Question 7</b> Expand and simplify $(x + 1)(x + 2)(x - 1)$	<b>Question 8</b> Expand and simplify $(x + 2)(x + 2)(x + 3)$
<b>Question 9</b> Write down the exact value of $\tan 45^\circ$	<b>Question 10</b> Write down the exact value of $\cos 90^\circ$	<b>Question 11</b> A block has a mass of 140g and a volume of $70 \text{ cm}^3$ . Calculate the density.	<b>Question 12</b> Find the force applied over an area of $14 \text{ m}^2$ that is needed to result in a pressure of $8 \text{ N/m}^2$
<b>Question 13</b> If $f(x) = 29 - 3x$ find the value of $f(2)$	<b>Question 14</b> If $f(x) = 28 - x$ find the value of $f(2)$	<b>Question 15</b> If the $n$ th term of a sequence is $\frac{6n}{10n-5}$ what is the 8th term?	<b>Question 16</b> If the $n$ th term of a sequence is $\frac{n^2}{n+1}$ what is the 6th term?
<b>Question 17</b> Work out $5 \times 10^5 \times 8 \times 10^3$	<b>Question 18</b> Work out $(7.2 \times 10^6) \div (8 \times 10^3)$	<b>Question 19</b> Solve simultaneously $x + y = 2$ and $2x + 3y = 9$	<b>Question 20</b> Solve simultaneously $6x - 6y = 18$ and $3x + 2y = 19$

**SKILLS CHECK**

Score

Name :

HAA2.6

<b>Question 1</b> Simplify $\sqrt{1134} + 2\sqrt{14}$	<b>Question 2</b> Simplify $\sqrt{112} + 3\sqrt{7}$	<b>Question 3</b> Find the coordinates of the vertex of the graph of $y = x^2 + 20x + 96$	<b>Question 4</b> Find the coordinates of the vertex of the graph of $y = x^2 + 6x + 1$
<b>Question 5</b> Use the formula $v = u + at$ to find $u$ when $v = 28$ , $a = 7$ and $t = 2$	<b>Question 6</b> Use the formula $v^2 = u^2 + 2as$ to find $a$ when $u = 2$ , $v = 12$ and $s = 10$	<b>Question 7</b> Expand and simplify $(x + 2)(x + 2)(x + 1)$	<b>Question 8</b> Expand and simplify $(x - 2)(x + 3)(x + 1)$
<b>Question 9</b> Write down the exact value of $\sin 60^\circ$	<b>Question 10</b> Write down the exact value of $\sin 45^\circ$	<b>Question 11</b> A block has a mass of 140g and a density of $70 \text{ g/cm}^3$ . Calculate the volume.	<b>Question 12</b> A force of 63 N acts over an area of $7 \text{ m}^2$ . What is the pressure?
<b>Question 13</b> If $f(x) = 28 + 4x^2$ find the value of $f(-5)$	<b>Question 14</b> If $f(x) = 27 + 3x^2$ find the value of $f(4)$	<b>Question 15</b> If the $n$ th term of a sequence is $\frac{n-1}{n+1}$ what is the 11th term?	<b>Question 16</b> If the $n$ th term of a sequence is $\frac{n+1}{3n}$ what is the 10th term?
<b>Question 17</b> Work out $7 \times 10^3 \times 3 \times 10^4$	<b>Question 18</b> Work out $(8 \times 10^6) \div (4 \times 10^4)$	<b>Question 19</b> Solve simultaneously $x + y = 10$ and $2x + 5y = 35$	<b>Question 20</b> Solve simultaneously $4x - 3y = 11$ and $4x + 3y = 29$

**SKILLS CHECK**

Score

Name :

HAA2.7

<b>Question 1</b> Simplify $\sqrt{45} + 6\sqrt{5}$	<b>Question 2</b> Simplify $\sqrt{250} + 7\sqrt{10}$	<b>Question 3</b> Find the coordinates of the vertex of the graph of $y = x^2 + 6x + 8$	<b>Question 4</b> Find the coordinates of the vertex of the graph of $y = x^2 - 2x + 7$
<b>Question 5</b> Use the formula $v = u + at$ to find $u$ when $v = 52$ , $a = 6$ and $t = 6$	<b>Question 6</b> Use the formula $v^2 = u^2 + 2as$ to find $a$ when $u = 12$ , $v = 2$ and $s = 5$	<b>Question 7</b> Expand and simplify $(x + 2)(x + 3)(x + 1)$	<b>Question 8</b> Expand and simplify $(x - 2)(x - 3)(x + 4)$
<b>Question 9</b> Write down the exact value of $\cos 90^\circ$	<b>Question 10</b> Write down the exact value of $\cos 45^\circ$	<b>Question 11</b> A block has a mass of 120g and a density of $30 \text{ g/cm}^3$ . Calculate the volume.	<b>Question 12</b> Find the force applied over an area of $2 \text{ m}^2$ that is needed to result in a pressure of $8 \text{ N/m}^2$
<b>Question 13</b> If $f(x) = 21 - 3x$ find the value of $f(2)$	<b>Question 14</b> If $f(x) = 28 - x$ find the value of $f(-3)$	<b>Question 15</b> If the $n$ th term of a sequence is $\frac{2n-1}{n+1}$ what is the 8th term?	<b>Question 16</b> If the $n$ th term of a sequence is $\frac{n}{n+1}$ what is the 6th term?
<b>Question 17</b> Work out $8 \times 10^3 \times 2 \times 10^2$	<b>Question 18</b> Work out $(1.6 \times 10^8) \div (4 \times 10^2)$	<b>Question 19</b> Solve simultaneously $4x - 5y = -7$ and $3x - 2y = 0$	<b>Question 20</b> Solve simultaneously $x + y = 6$ and $6x + 2y = 28$

**SKILLS CHECK**

Score