**1.** (*x* + 2)(*x* - 4)=

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *x2 + 2x - 8* | *x2 + 6x - 8* | *x2 + 2x -2* | *x2 + 2x + 2* | *x2 - 2x - 8* |
| **A** | **B** | **C** | **D** | **E** |

**2.** Factorise *x*2 *– x –* 6

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (*x*–3)(*x*–2) | (*x*+1)(*x–*6) | (*x*+3)(*x*–2) | (*x*–3)(*x*+2) | (*x*–1)(*x*–5) |
| **A** | **B** | **C** | **D** | **E** |

**3.**

$$2\frac{2}{3}$$

$$1\frac{3}{4}$$

Diagram NOT accurately drawn

 A machine tool is made from two parts

 One part has a length of $1\frac{3}{4}$ inches

 The other part has a length of $2\frac{2}{3}$ inches.

 What is the total length, in inches, of the machine tool?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| $$3\frac{5}{7}$$ | $$4\frac{5}{12}$$ | $$4\frac{2}{3}$$ | $$\frac{15}{7}$$ | $$3\frac{5}{12}$$ |
| **A** | **B** | **C** | **D** | **E** |

**4.** The Lowest Common Multiple (LCM) of 30 and 48 is

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 720 | 8 | 240 | 6 | 1440 |
| **A** | **B** | **C** | **D** | **E** |

**5.** The length of a piece of wood is 123 mm, correct to the nearest mm.

What is the greatest length that the piece of wood could be?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 123.4 mm | 122.5 mm | 123.48 mm | 124 mm | 123.5 mm |
| **A** | **B** | **C** | **D** | **E** |

**6.** Factorise completely 6*x*2 – 9*xy*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3*x*(2 – 3*y*) | 3*x*(2*x* – 3*y*) | 3(*x*2 – 3*xy)* | *x*(6*x* – 9*y*) | 2*x* – 3*y* |
| **A** | **B** | **C** | **D** | **E** |

**7.** What is the number 23 500 in standard form?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2.35×102 | 2.3×104 | 2.35×104 | 2.35×10–4 | 235×104 |
| **A** | **B** | **C** | **D** | **E** |

**8.** *F* and *G* are two points on a coordinate grid.

Point *F* is (2, 3).

Point *G* is (6, –1,).

Which are the coordinates of the midpoint of the line segment *FG?*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (4, 2) | (2, 1) | (1, 4) | (3.5, 2) | (4, 1) |
| **A** | **B** | **C** | **D** | **E** |

**9.** Expand and simplify (3*x* – 2*y*)2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 9*x*2–4*y*2 | 9*x*2+4*y*2 | 9*x*2-12xy+4*y* | 9*x*2+12xy-4*y*2 | 9*x*2-12xy+4*y*2 |
| **A** | **B** | **C** | **D** | **E** |

**10.** (2*x* + 1)(*x* – 3) =

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2*x*2+5*x–*3 | 2*x*2–2*x*–3 | 2*x*2+2*x*–3 | 2*x*2–5*x*–3 | 2*x*2–5*x*+3 |
| **A** | **B** | **C** | **D** | **E** |

**11.** Factorise 6*x*2 + *x –* 12

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (2*x*–3)(3*x*+4) | (2*x*–3)(3*x–*4) | (6*x*–3)(*x*+4) | (2*x*+3)(3*x*–4) | (6*x*+3)(*x*–4) |
| **A** | **B** | **C** | **D** | **E** |

**12.** A tank contained 48 000 cm3 of salt.

The salt was removed from the tank at a constant rate.

It took 2 hours and 40 minutes to empty the tank completely.

At what rate, in cm3 per second, was the salt removed from the tank?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | 6 | 13 | 36 | 300 |
| **A** | **B** | **C** | **D** | **E** |