

 chapter 11 review

1. (a) ✎ Factorise each of the following:

(i) $7a - 14b$

(ii) $x^2 - 25$

(b) ✎ Factorise fully each of the following:

(i) $5x^2 - 80$

(ii) $x^3 - 6x^2 - 7x$

(c) ✎ By factorising the top line and the bottom line,

simplify $\frac{x^2 - x}{x^2 - 3x + 2}$.

Hence, find the value of $\frac{x^2 - x}{x^2 - 3x + 2}$ when $x = 3$.

2. (a) ✎ Factorise each of the following:

(i) $4x^2 - 21x$

(ii) $x^2 - 25x + 24$

(b) ✎ Use factors to simplify each of the following:

(i) $44^2 - 36^2$

(ii) $(30.02)^2 - (29.98)^2$

(c) ✎ The area of a rectangle is $x^2 + 5x$ sq. units. By using factors, find the lengths of the sides of the rectangle in terms of x . Hence, find the perimeter of the rectangle when $x = 4$.

3. (a) ✎ Factorise each of the following:

(i) $10xy + 5y$

(ii) $6ap + py + 6ar + ry$

(b) ✎ Factorise fully each of the following:

(i) $x^3 - 49x$

(ii) $64x^2 - 16y^2$

(c) ✎ The factors for $x^2 + bx + c$ are $(x + 6)$ and $(x + 8)$. Find the value of b and the value of c .

4. (a) Write down the highest common factor of each of the following expressions:
- $12a + 6b$
 - $16x^2y - 8yx^2$
- (b) ✎ Factorise each of the following:
- $px + 9x + 4p + 36$
 - $144y^2 - x^2$
- (c) ✎ Use factors to simplify $\frac{x(y+p) - y - p}{x-1}$.
5. (a) ✎ Factorise each of the following:
- $pxy + 2y$
 - $x^2 + 13x + 40$
- (b) ✎ Simplify and then factorise $2(x^2 - 3x) - (x^2 - 5x + 6)$.
- (c) ✎ The areas of the various parts of a rectangle are given.
- Find the lengths of the sides of the larger rectangle.
- Then use these lengths to factorise $x^2 + 16x + 48$.
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| x^2 | $12x$ |
| $4x$ | 48 |
6. (a) ✎ Factorise each of the following:
- $-2 - 4x$
 - $x^2 - 15x + 56$
- (b) ✎ Simplify and then factorise $2(x^2 - 3x) + 4(2x^2 - 5x)$.
- (c) ✎ Show that $(x + 1)^2 - x^2$ simplifies to $2x + 1$.