Revision & Practice Worksheet 14

A Algebra: Factorising algebraic expressions

Skill 3.4

Factorise the following:

1 $6ab - 2a$
2 $3a^2b + 4a$
3 $5a^2 + 10a$
4 $9ay + 2xy - y$
5 $D^2 - C^2$
6 $25x^2 - y^2$
7 $98a^2b^4 - 2$
8 $(x-2y)^2 - (x+y)^2$
9 $x^2 - 3x - 4$
10 $x^2 - x - 6$
11 $2x^2 - 5x - 12$
12 $5x^2 + 9x - 2$
13 $ax - 2a + bx - 2b$
14 $2ax - 2bx + a - b$
15 $ab - ac + b - c$
16 $2ab - 8a - 3b + 12$

B Algebra: Solving simple linear equations

Skill 3.5

Solve these equations for x:

1 $x + 3.8 = -12.4$
2 $2x = 15.02$
3 $\frac{x}{3} = 6.2$
4 $x - 2.1 = 6.8$
5 $\frac{3x}{2} = 21.3$
6 $4x + 1 = 21$
7 $6x - 1 = 15$
8 $\frac{x+4}{2} = -9$
9 $\frac{x+4}{3} = -12$
10 $2(x+3) = 6$
11 $7(x-4) = 21$
12 $\frac{-3(x+1)}{5} = 18$
13 $\frac{x-6}{3} = -11$
14 $3.8(x+2) = 11.4$
15 $8(x-4.02) = 20$

C Indices: Dividing index expressions

Skill 4.3

Simplify:

1 $x^5 \div x^2$
2 $ax^4 \div ax^3$
3 $a^4b^5 \div a^3b^2$
4 $x^{13} \div 3x^2y^4$
5 $5a^2b^3 \div 10ab$
6 $7a^4b^5 \div 21ab$
7 $21a^2b^3 \div 7a^4b^6$
8 $27a^4b^{11} \div 2ab^{16}$
9 $-15a^4b^3 \div 3ab^{10}$
10 $25a^4b^{16} \div 2ab^{15}$
11 $12ab \div 24a^2b^4$
12 $360a^4b^8 \div 45a^4b^6$

D Indices: Multiplying and dividing terms containing indices

Skill 4.4

Simplify:

1 $\frac{3a^4b^9}{2ab^3} \times \frac{a^4b}{6a}$
2 $\frac{12a^4b^{10}}{7a^3} \times \frac{5ab^4}{9a^4}$
3 $\frac{5a^4b^3}{10a^5b} \times \frac{9ab^8}{2a}$
4 $\frac{5a^4}{2b^3} \div \frac{a^6}{b^4} \times \frac{6a}{b}$
5 $\frac{16a^5}{7b} \times \frac{9a^2b}{2b} \div \frac{3b}{4a}$
6 $\frac{3ab^2}{4b^6} \div \frac{8a^2b^4}{5a^4}$
7 $\frac{19a^4}{6b^3} \times \frac{2a^4b}{3ab^5}$
8 $\frac{17a^4b^3}{2a^9b} \div \frac{a^4}{b^7} \times \frac{3}{2b}$
9 $\frac{16a^4b}{9ab^4} \div \frac{4a}{12b} \times \frac{6a}{7b}$

E Cartesian plane: Graphing inequations

Skill 5.6

1 Sketch the line $y = 2x + 4$ and show the regions of the graph:
(a) $y > 2x + 4$ (b) $y \geq 2x + 4$ (c) $y < 2x + 4$ (d) $y \leq 2x + 4$

2 Sketch the line $y = -3$ and show these regions:
(a) $y > -3$ (b) $y \geq -3$ (c) $y < -3$ (d) $y \leq -3$

Worksheet 14

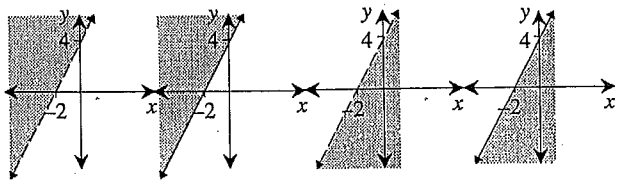
A **1** $2a(3b-1)$ **2** $a(3ab+4)$
3 $5a(a+2)$ **4** $y(9a+2x-1)$
5 $(D-C)(D+C)$ **6** $(5x-y)(5x+y)$
7 $2(7ab^2-1)(7ab^2+1)$ **8** $-3y(2x-y)$
9 $(x-4)(x+1)$ **10** $(x+2)(x-3)$
11 $(2x+3)(x-4)$ **12** $(5x-1)(x+2)$
13 $(a+b)(x-2)$ **14** $(2x+1)(a-b)$
15 $(a+1)(b-c)$ **16** $(2a-3)(b-4)$

B **1** -16.2 **2** 7.51 **3** 18.6 **4** 8.9
5 14.2 **6** 5 **7** $2\frac{2}{3}$ **8** -22
9 -40 **10** 0 **11** 7 **12** -31
13 -27 **14** 1 **15** 6.52

C **1** x^3 **2** x **3** ab^3 **4** $\dfrac{x^{11}}{3y^4}$
5 $\dfrac{ab^2}{2}$ **6** $\dfrac{a^3b^4}{3}$ **7** $\dfrac{3}{a^2b^3}$ **8** $\dfrac{27a^3}{2b^5}$
9 $-\dfrac{5a^3}{b^7}$ **10** $\dfrac{25a^3b}{2}$ **11** $\dfrac{1}{2ab^3}$ **12** $8b^2$

D **1** $\dfrac{a^7b^7}{4}$ **2** $\dfrac{20b^{14}}{21a^2}$ **3** $\dfrac{9b^{10}}{4a}$ **4** $\dfrac{15}{a}$
5 $\dfrac{96a^8}{7b^2}$ **6** $\dfrac{15a^3}{32b^8}$ **7** $\dfrac{19a^7}{9b^7}$ **8** $\dfrac{51b^8}{4a^9}$
9 $\dfrac{32a^3}{7b^3}$

E **1** (a) (b) (c) (d)



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