

Revis & Practice Worksheet 6

A Indices: Numbers and indices

Evaluate:

- | | | |
|--------------------------------|---------------------------------|--------------------------------|
| 1 $3^3 \times 2^3 \times 5^3$ | 2 $2^3 + 3^3 + 5^3$ | 3 $2^3(4^3 + 3^5)$ |
| 4 $5^3 + 2^4 + 3^3$ | 5 $\frac{9^2 \times 3^3}{3^4}$ | 6 $3^5(2^3 + 2^4 + 2^5)$ |
| 7 $\frac{5^3 \times 3^2}{4^2}$ | 8 $5^3(2^3 + 4^3)$ | 9 $7^3 \times 2^3 \times 5^3$ |
| 10 $11^3 - 4^3 \times 5^3$ | 11 $15^2 \times 3^2 \times 2^3$ | 12 $6^4 \times 2^3 \times 3^4$ |

Skill 4.1

B Number applications: Converting rate units

- Find the conversion factor to change acceleration units from m/s^2 to:

(a) m/min^2	(b) m/h^2	(c) km/s^2	(d) km/h^2
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- Find the conversion factor to change speed units from km/h to m/min , and use it to change these speeds:

(a) $192 \text{ km/h} = \underline{\hspace{2cm}} \text{ m/min}$	(b) $2082 \text{ km/h} = \underline{\hspace{2cm}} \text{ m/min}$
(c) $683.1 \text{ km/h} = \underline{\hspace{2cm}} \text{ min}$	(d) $981 \text{ km/h} = \underline{\hspace{2cm}} \text{ m/min}$
(e) $32.01 \text{ km/h} = \underline{\hspace{2cm}} \text{ m/min}$	

Skill 2.10

C Algebra: Solving complex linear equations

Solve these equations for x :

- | | | |
|---------------------------------|-----------------------------|----------------------------|
| 1 $3x + 4 = 12 + x$ | 2 $-3x - 8 = x + 4$ | 3 $4x + 2 = -3x - 12$ |
| 4 $-2(x + 3) = -16$ | 5 $5(2x + 3) = -10$ | 6 $\frac{4x - 1}{3} = -12$ |
| 7 $\frac{5x + 2}{7} = 10$ | 8 $7(2x + 3) + 5 = 19$ | 9 $2(4x + 3) = -12.2$ |
| 10 $\frac{2(x + 4)}{3} = -14.8$ | 11 $\frac{-9x + 2}{3} = -1$ | 12 $4(x + 3) = 5x - 1$ |

Skill 3.6

D Algebra: Solving linear inequations

Solve these inequations and show the solution using a number line:

- | | | |
|------------------|----------------------|--------------------------|
| 1 $x - 2 \geq 1$ | 2 $2x < -4$ | 3 $5x + 3 \geq 4x + 10$ |
| 4 $-2x > 10$ | 5 $-3x - 6 \leq -12$ | 6 $\frac{2 - x}{3} > -4$ |

Skill 3.7

E Indices: Multiplying and dividing terms containing indices

- | | | |
|---|--|---|
| 1 $\frac{15a^5b^4}{5a^4b^2} \times a^2b^4$ | 2 $\frac{16a^3b^4}{2c^4} \times \frac{3a^4b^5}{8c}$ | 3 $\frac{6a^3b^2}{7a^4} \times \frac{6a^5b^2}{16a^4}$ |
| 4 $\frac{9a^4b^2}{7a^3b} \times \frac{9a^4}{12b^4}$ | 5 $\frac{6a^3b^2}{4a^9b^4} \times \frac{2a^3b}{7ab^4}$ | 6 $\frac{2a^4b}{7a^3b^2} \times \frac{3a^4}{2b^4} \div \frac{6b}{7a^4}$ |
| 7 $\frac{3a^4b^3}{2ab^4} \div \frac{a^4}{b} \times \frac{3a}{2b^3}$ | 8 $\frac{9a^3b^4}{2a^3b} \div \frac{16a}{7b} \times \frac{a}{b}$ | 9 $\frac{10a^2b}{15a^3} \times \frac{6a^4}{9b} \div \frac{2a}{7}$ |
| 10 $\frac{11a^3b^2}{6a^4b} \div \frac{3a}{2b} \times \frac{6}{4b}$ | | |

Skill 4.4

Worksheet 6

- A** 1 27 000 2 160 3 2072
 4 168 5 27 6 13 608
 7 $70\frac{5}{16}$ 8 9000 9 343 000
 10 -6669 11 16 200 12 839 808

- B** 1 (a) 3600 (b) 3600×3600

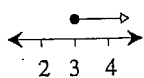
- (c) $\frac{1}{1000}$ (d) 12 960

- 2 Factor $\frac{50}{3}$ (a) 3200 (b) 34 700

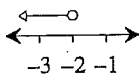
- (c) 11 385 (d) 16350 (e) 533.5

- C** 1 4 2 -3 3 -2 4 5
 5 $-2\frac{1}{2}$ 6 $-8\frac{3}{4}$ 7 $13\frac{3}{5}$ 8 $-\frac{1}{2}$
 9 -2.275 10 18.2 11 $\frac{5}{9}$ 12 13

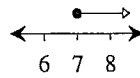
D 1 $x \geq 3$



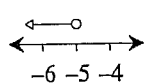
2 $x < -2$



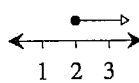
3 $x \geq 7$



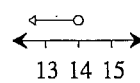
4 $x < -5$



5 $x \geq 2$



6 $x < 14$



E 1 $3a^3b^6$

2 $\frac{3a^7b^9}{c^5}$

3 $\frac{9b^4}{28}$

4 $\frac{27a^5}{28b^3}$

5 $\frac{21b}{4a^8}$

6 $\frac{a^9}{2b^6}$

7 $\frac{9}{4b^3}$

8 $\frac{63b^3}{32}$

9 $\frac{14a^2}{9}$

10 $\frac{11b}{6a^2}$